

ENVIRONMENTAL ASSESSMENT

ANTI-TERRORISM / FORCE PROTECTION GATE PROJECTS AT FAIRCHILD AFB, WASHINGTON



U.S. AIR FORCE



**DEPARTMENT OF THE AIR FORCE
AIR MOBILITY COMMAND
FAIRCHILD AFB, WASHINGTON**

SEPTEMBER 2003

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14. ABSTRACT The Air Force has a requirement to improve gate security, ensure personnel safety and reduce traffic congestion, while maintaining access control at Fairchild AFB. The action is needed to: ensure the protection and security of Department of Defense (DoD) forces and assets against acts of terrorism; ensure the safety of security forces and motorists improve the Base entry gate capacity and traffic flow; and, improve the aesthetic quality of entry control facilities (ECF) on Fairchild AFB. To meet these requirements, the Air Force is proposing to implement structural and operational modifications at entry control facilities (ECF) on Fairchild AFB. The Base currently operates four gates on Fairchild AFB: the Main Gate; the Graham Gate; the Rambo Gate; and, Gate 20. The Proposed Action would result in development of a commercial gate along Rambo Road. As an Alternative Action, the Air Force is considering improving the Graham Gate for commercial entry. Under the No Action Alternative, no improvements to gate security or other force protection measures would be accomplished. Resources considered in the impact analysis were: air quality; noise biological resources; cultural resources; infrastructure and utilities; environmental management; hazardous materials and wastes; and environmental justice. No significant impacts would result from implementation of the Proposed or Alternative Actions, or the No Action Alternative.					
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FINDING OF NO SIGNIFICANT IMPACT
ANTI-TERRORISM/FORCE PROTECTION FACILITIES AT
FAIRCHILD AIR FORCE BASE, WASHINGTON

AGENCY

Department of the Air Force, Fairchild Air Force Base (AFB), Washington.

BACKGROUND

The Air Force has a requirement to improve gate security, ensure personnel safety and reduce traffic congestion, while maintaining access control at Fairchild AFB. The action is needed to: ensure the protection and security of Department of Defense (DoD) forces and assets against acts of terrorism; ensure the safety of security forces and motorists; improve the Base entry gate capacity and traffic flow; and, improve the aesthetic quality of entry control facilities (ECF) on Fairchild AFB. To meet these requirements, the Air Force is proposing to implement structural and operational modifications at entry control facilities (ECF) on Fairchild AFB. The Base currently operates four gates: the Main Gate; the Graham Gate; the Rambo Gate; and, Gate 20.

PROPOSED ACTION

The Air Force is proposing to construct physical improvements to each of the ECFs at Fairchild AFB in accordance with the recommendations identified in a traffic engineering study and Air Mobility Command (AMC) guidance. The Proposed Action would result in construction of upgrades and new security features at the gates as well as associated operational changes to Base access. The primary upgrades would include construction of a new Visitor Center at the Main Gate and an expanded area for commercial vehicle inspection at the Rambo Gate.

ALTERNATIVE ACTION

As an Alternative Action, the Air Force is also considering modifications to the Graham Gate to enable access by commercial vehicles, without the need for the Rambo Gate.

NO ACTION ALTERNATIVE

Under the No Action Alternative, Fairchild AFB would continue to operate its bases with existing force protection measures that are inadequate and do not meet requirements. The No Action Alternative would result in no construction activities or operational changes to any of the existing gates on Fairchild AFB.

SUMMARY OF FINDINGS

Pursuant to NEPA guidance, 32 CFR 989 (*Air Force Environmental Impact Analysis Process*), and other applicable regulations, the Air Force completed an environmental assessment (EA) of the potential environmental consequences of implementation of the proposed AT/FP improvements to Base gates. The EA, which supports this Finding of No Significant Impact (FONSI), evaluated the No Action Alternative, Proposed Action, and an Alternative Action.

EVALUATION OF THE NO ACTION ALTERNATIVE

No significant impacts occur from the baseline activities.

EVALUATION OF THE PROPOSED ACTION, FAIRCHILD AFB

Air Quality. The greatest increase for any of the criteria air pollutants would be 6.56 tons per year (tpy) for particulate matter (PM₁₀), which equates to 0.094 percent of the baseline PM₁₀ emissions within the air quality control region (AQCR). These emissions are not considered significant, and an USEPA

Conformity Determination would not be required because the affected area is in attainment of National Ambient Air Quality Standards (NAAQS).

Noise. Construction noise for development of the Rambo Gate for commercial vehicles may have a short-term impact on occupants in two residences along Rambo Road. Temporary interior noise levels from 57 to 62 decibels (dB) could annoy less than 15 percent of nearby persons and cause temporary disruption of speech during the noise event. The impact from operational noise from up to 41 inbound peak hour commercial vehicles along Rambo Road would not be considered significant. Operational noise at the Graham Gate would be reduced from baseline conditions as a result of relocating commercial vehicle access to the Rambo Gate. Impacts to the noise environment as a result of the Proposed Action would not be considered significant.

Biological Resources. The Proposed Action would result in loss of approximately 6.5 acres of ruderal/non-native grassland vegetation. Construction activities would occur within developed, maintained areas with extant, highly modified and disturbed landscape, and would not substantially change habitat for plant or animal species. Construction would not result in any impacts to threatened or endangered species that occur on Fairchild AFB. The Proposed Action would not be located near nesting areas for grasshopper sparrow, a Washington sensitive species. There are no wetlands located in the area of Base gates.

Cultural Resources. No National Register of Historic Places (NRHP)-eligible archaeological resources are located within or adjacent to the Proposed Action region of influence (ROI) for Fairchild AFB. The probability is low that undisturbed, significant archaeological resources, including human graves, will be discovered on Fairchild AFB during construction. The action would be managed in accordance with the Fairchild AFB Integrated Cultural Resources Management Plan (ICRMP) that includes procedures that must be followed in the event of inadvertent discovery of cultural resources.

No NRHP-eligible historical resources are located within the ROI for Fairchild AFB. The Proposed Action would not result in demolition or modifications to any historic properties or structures. The Proposed Action would not result in impacts to historical resources.

No Native American concerns have been identified for Fairchild AFB. The Proposed Action would be implemented in accordance with the Fairchild AFB ICRMP, which specifies notification procedures applicable to Native American groups. With compliance to the ICRMP, the Proposed Action would not result in impacts to Native American concerns.

Infrastructure and Utilities. The Proposed Action would result in a temporary and localized increase in construction-related traffic. The Proposed Action would be expected to lessen, and not worsen, congestion at the gates during peak morning hours. Impacts to transportation systems would not be considered significant.

Construction and demolition debris disposal would not exceed the capacity of the permitted, off-Base landfill. Solid waste generated by personnel would not change as a result of the Proposed Action. Impacts from solid waste disposal would not be considered significant.

Environmental Management. Proposed construction at Gate 20 would be located in an area that is within proximity to Environmental Restoration Program (ERP) sites FT-01, FT-02, SW-7 and SW-12. Two basewide ERP sites are also present. Facilities design and construction activities at the Gate 20 would be coordinated with the Base Environmental Flight and Bioenvironmental Engineering to ensure that construction would avoid interference with any ongoing ERP investigation and remediation work and would not worsen the condition of this site. Before construction activities begin, the contractor would be required to coordinate with the Environmental Flight and prepare a work plan and health and safety plan in case contamination is encountered during excavation activities. In the event any contaminated soil is encountered, the construction contractor will be required to excavate, properly dispose any contaminated

soil and replace excavated soil with clean soil. With implementation of best management practices, impacts to ERP sites would be avoided.

EVALUATION OF THE ALTERNATIVE ACTION

With the exception of noise and biological resources, the Alternative Action would result in the same impacts as described for the Proposed Action.

Noise. Construction noise from the Alternative Action may have a short-term impact on occupants at military family housing and the elementary school in the vicinity of the Graham Gate. Temporary interior noise levels from 57 to 62 dB could annoy less than 15 percent of nearby persons and cause temporary disruption of speech during the noise event. Operational noise from up to 41 inbound peak hour commercial vehicles at the Graham Gate would be the same as baseline conditions, and noise impacts would not be considered significant.

Biological Resources. The Alternative Action would result in loss of approximately 4.5 acres of ruderal/non-native grassland vegetation. Impacts to biological resources would not be considered significant.

ENVIRONMENTAL JUSTICE

Based on analysis conducted for this EA, it is determined that activities associated with the Proposed Action, Alternative Action, and No Action Alternative would not impose adverse environmental effects on adjacent populations. Therefore, no disproportionately high and adverse effects would occur to minority and low-income populations.

PUBLIC REVIEW

A Notice of Availability for the Draft EA for this action was published in The Spokesman-Review (Spokane, WA) on August 10, 2003. No comment letters were received during the public review period for the Draft EA.

DECISION

Based on my review of the facts and analyses contained in the EA, I conclude that implementation of either the Proposed Action or Alternative Action will not have a significant impact either by itself or when considering cumulative impacts. Accordingly, requirements of the NEPA, regulations promulgated by the Council on Environmental Quality, and 32 CFR 989 are fulfilled and an environmental impact statement is not required.



RONALD R. DANIELS, Deputy Base Civil Engineer
Executive Secretary
Environmental Protection Committee
Fairchild Air Force Base, Washington

9 Sep 03

Date

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**ANTI-TERRORISM/FORCE PROTECTION
GATE PROJECTS AT
FAIRCHILD AIR FORCE BASE, WASHINGTON**

**DEPARTMENT OF THE AIR FORCE
AIR MOBILITY COMMAND
FAIRCHILD AIR FORCE BASE, WASHINGTON**

SEPTEMBER 2003

COVER SHEET

ENVIRONMENTAL ASSESSMENT

ANTI-TERRORISM / FORCE PROTECTION GATE PROJECTS AT FAIRCHILD AIR FORCE BASE, WASHINGTON

Responsible Agency: Department of the Air Force, Fairchild Air Force Base (AFB), Washington.

Proposed Action: Construct Anti-Terrorism / Force Protection Gate Projects at the Base entrance/exit gates

Contact Information: Written comments and inquiries regarding this document should be directed to: Mr. Jonathan Wald, 92 CES/CEVN, 100 W. Ent Street, Suite 155, Fairchild AFB, WA 99011, Phone (509) 247-8207, Fax: (509) 247-4858 email: jonathan.wald@fairchild.af.mil.

Report Designation: Environmental Assessment

Abstract: The Air Force has a requirement to improve gate security, ensure personnel safety and reduce traffic congestion, while maintaining access control at Fairchild AFB. The action is needed to: ensure the protection and security of Department of Defense (DoD) forces and assets against acts of terrorism; ensure the safety of security forces and motorists; improve the Base entry gate capacity and traffic flow; and, improve the aesthetic quality of entry control facilities (ECF) on Fairchild AFB. To meet these requirements, the Air Force is proposing to implement structural and operational modifications at entry control facilities (ECF) on Fairchild AFB. The Base currently operates four gates on Fairchild AFB: the Main Gate; the Graham Gate; the Rambo Gate; and, Gate 20. The Proposed Action would result in development of a commercial gate along Rambo Road. As an Alternative Action, the Air Force is considering improving the Graham Gate for commercial entry. Under the No Action Alternative, no improvements to gate security or other force protection measures would be accomplished. Resources considered in the impact analysis were: air quality; noise; biological resources; cultural resources; infrastructure and utilities; environmental management; hazardous materials and wastes; and environmental justice. No significant impacts would result from implementation of the Proposed or Alternative Actions, or the No Action Alternative.

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ACRONYMS AND ABBREVIATIONS

AASHTO	American Association of State Highway and Transportation Officials
ACM	Asbestos-containing materials
ACP	Architectural Compatibility Plan
AFB	Air Force Base
AFI	Air Force Instruction
AFRC	Air Force Reserve Command
AHPA	Archeological and Historic Preservation Act
AICUZ	Air Installation Compatible Use Zone
AIRFA	American Indian Religious Freedom Act
AMC	Air Mobility Command
AMW	Air Mobility Wing
ANSI	American National Standards Institute
APE	Area of Potential Effect
AQCR	Air Quality Control Region
ARPA	Archeological Resources Protection Act
AT/FP	Anti-Terrorism/Force Protection
AW	Airlift Wing
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CES/CEV	Civil Engineering Squadron/Environmental Flight
CFR	Code of Federal Regulations
CO	Carbon Monoxide
dB	Decibel
dBA	A-weighted decibel
DNL	Day –Night average sound Level
DoD	Department of Defense
E.O.	Executive Order
EA	Environmental Assessment
ECF	Entry Control Facility
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
ERP	Environmental Restoration Program
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FICON	Federal Interagency Committee on Urban Noise
FONSI	Finding of No Significant Impact
FPCON	Force Protection Conditions
FY	Fiscal year
FY02	Fiscal Year 2002
GOQ	General Officers Quarters
HCM	Highway Capacity Manual
HQ AMC	Headquarters, Air Mobility Command
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
IRP	Installation Restoration Program
lb	pound(s)
LBP	lead-based paint
LOS	Level of Service
µg/m ³	micrograms per cubic meter

N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NLR	Noise Level Reduction
NO	Nitric Oxide
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
NPL	National Priority List
NRHP	National Register of Historic Places
O ₃	Ozone
Pb	Lead
PM ₁₀	Particulate Matter
POL	Petroleum Oil and Lubricant
POV	privately-owned vehicle(s)
PVC	Plastic Vinyl Coating
RI/FS	Remedial Investigation/Feasibility Study
ROI	Region of Influence
SARA	Superfund Amendments and Reauthorization Act
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
SOC	Species of Concern
SO _x	Sulfur Oxides
SWPPP	Storm Water Pollution Protection Plan
tpy	tons per year
TSP	Total Suspended Particulates
USAF	United States Air Force
USC	United States Code
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Forest and Wildlife Service
VOC	Volatile Organic Compounds

CHAPTER 1

PURPOSE OF AND NEED FOR THE PROPOSED ACTION

This chapter has six sections: introduction; need for the action; objectives of the action; scope of the environmental review; applicable regulatory requirements; and organization of the document.

1.1 INTRODUCTION

The Air Force has a requirement to improve gate security, ensure personnel safety and reduce traffic congestion, while maintaining access control at Fairchild AFB. To meet these requirements, the Air Force is proposing to implement structural and operational modifications along the perimeter and at entry control facilities (ECF) on Fairchild AFB.

Fairchild AFB is an Air Mobility Command (AMC) Base located in eastern Washington approximately 12 miles west of the City of Spokane (Figure 1-1). Communities located near the Base include Airway Heights and Medical Lake.

1.2 NEED FOR THE ACTION

The action is needed to:

- Ensure the protection and security of Department of Defense (DoD) forces and assets against acts of terrorism;
- Ensure the safety of security forces and motorists;
- Improve the Base entry gate capacity and traffic flow; and,
- Improve the aesthetic quality of the Base perimeter and ECFs on the Base.

1.3 OBJECTIVE OF THE ACTION

The objective of the action is to improve gate security, ensure personnel safety and reduce traffic congestion, while maintaining access control at Fairchild AFB. The Air Force is proposing to construct physical improvements to process visitors and commercial vehicles, as well as implement operational modifications ECFs on Fairchild AFB.

1.4 SCOPE OF THE ENVIRONMENTAL REVIEW

The National Environmental Policy Act (NEPA) of 1969, as amended, requires federal agencies to consider environmental consequences in the decision-making process. The President's Council on Environmental Quality (CEQ) issued regulations to implement NEPA that include provisions for both the content and procedural aspects of the required environmental analysis. The Air Force Environmental Impact Analysis Process (EIAP) is accomplished through adherence to the procedures set forth in CEQ regulations (40 Code of

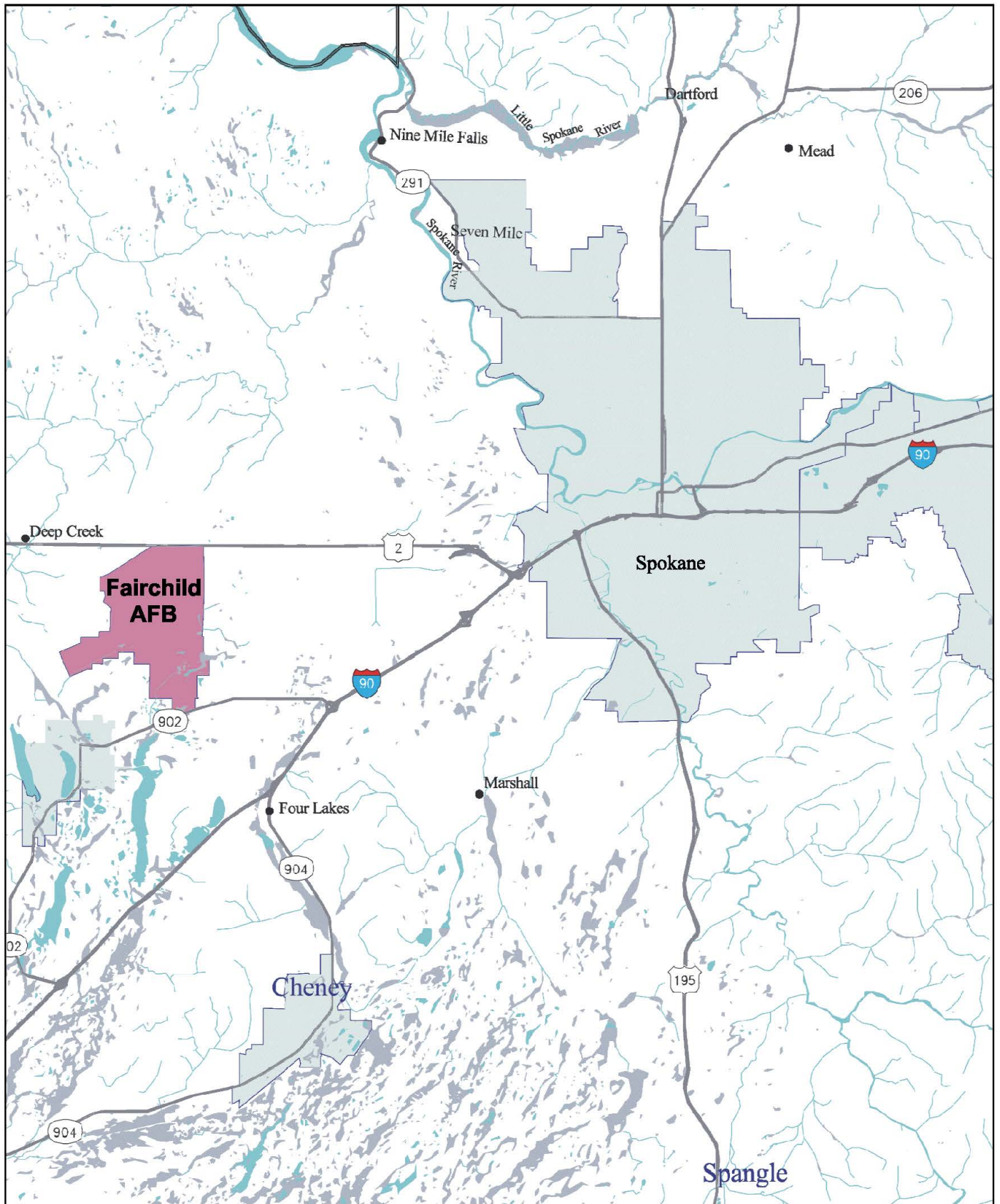
Federal Regulations [CFR] Sections 1500-1508) and 32 CFR 989 (*Air Force Environmental Impact Analysis Process*), 15 Jul 99, and amended 28 Mar 01. These federal regulations establish both the administrative process and substantive scope of the environmental impact evaluation designed to ensure that deciding authorities have a proper understanding of the potential environmental consequences of a contemplated course of action. The CEQ regulations require that an environmental assessment (EA):

- Briefly provide evidence and analysis to determine whether the Proposed Action might have significant effects that would require preparation of an environmental impact statement (EIS). If analysis determines that the environmental effects would not be significant, a finding of no significant impact (FONSI) will be prepared;
- Facilitate the preparation of an EIS, when required; or
- Aid an agency's compliance with NEPA when no environmental impact statement is necessary.

The EA will assess the construction and operational aspects of the proposed anti-terrorism/force protection (AT/FP) measures at Fairchild AFB. This EA identifies, describes, and evaluates the potential environmental impacts that may result from implementation of the Proposed Action or an Alternative Action as well as possible cumulative impacts from other reasonably foreseeable actions planned for the Base. The EA also will identify required environmental permits relevant to the Proposed Action and Alternative Action. As appropriate, the affected environment and environmental consequences of the Proposed Action, Alternative Action, and No Action Alternative may be described in terms of site-specific descriptions or regional overview. Finally, the EA will identify mitigation measures to prevent or minimize environmental impacts, if required.

The following biophysical resources will be assessed in the EA: noise; air quality; biological resources; cultural resources; infrastructure (transportation systems) and utilities (solid waste management); environmental management (contaminated sites); hazardous materials and wastes; and environmental justice. The following resources are not evaluated in this EA (followed by a rationale for not evaluating each subject):

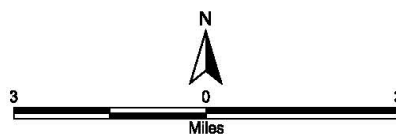
Geologic Resources. The construction projects associated with the action are located in portions of the Base that have been disturbed and altered by previous activities. Construction at the gates would not result in any substantial changes to physiographic features. No changes in site elevation would be required and alteration of ground surfaces would be minimal. Earthwork would be planned and conducted in a manner to minimize duration of exposure of unprotected soils. Work would be conducted in accordance with best management practices for erosion control. Landscaping of exposed surfaces following completion of construction would minimize the potential for erosion. For these reasons, no geologic, physiographic, or soil impacts would be anticipated from the proposed activities and soil resources are not assessed in this EA.



Fairchild Air Force Base



Washington



Location Map Fairchild AFB

Figure 1-1

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Water Resources and Floodplains. No water features are in or adjacent to any of the Base gates. The water table below the Base is 10 to 20 feet below ground surface, and none of the construction activity is anticipated to occur at this depth. None of the projects associated with the AT/FP facilities would be located within or adjacent to the 100- or 500-year floodplain (no floodplains are located on Fairchild AFB). Standard erosion control measures to prevent storm water pollution would be incorporated into facility construction and design to minimize soil disturbance, and prevent erosion and sedimentation, at the work site. Measures to prevent discharge of contaminants into surface waters would be followed during construction. For these reasons, no surface water, groundwater, or floodplain impacts would be anticipated; therefore, these resources are not assessed in this EA.

Infrastructure and Utilities. There would be no change in the number of personnel authorizations at Fairchild AFB as a result of the proposed activities. Therefore, there would be no long-term change in water consumption or wastewater generation from the current levels. It is likely water would be applied for dust suppression during construction activities. However, the amount of area that would be affected by construction would be small (approximately 13 acres total for all gates) and water application would be limited during the approximate 27-month construction period (maximum). The amount of water that would be applied would be minor when compared to current water system use and water application would not be long-term. It is anticipated that up to 6.5 acres of impervious cover would be added to the existing amount of cover at the Base as a result of the proposed activities. The storm water from the additional impervious cover would be minimal when compared to the current storm water runoff at the Base. For these reasons, no water, wastewater, or storm water system impacts would be anticipated. These subjects, typically included in infrastructure and utilities, are not assessed in this EA.

Land Use. Fairchild AFB is surrounded by agricultural land uses. No changes to existing on- or off-Base land use would result. The Proposed and Alternative Action would not require the acquisition of any private property. Facility construction would be consistent with existing and future land use plans and programs identified in the Fairchild AFB General Plan. Coordination with the Washington State Department of Transportation, Spokane County Public Works Department, and adjacent landowners would be required for improvements to Rambo Road. For these reasons, land use is not assessed in this EA.

Environmental Management. The Proposed Action would be accomplished in accordance with requirements contained in the Pollution Prevention Plan for Fairchild AFB. The action would be conducted in compliance with regulatory mandates in: the Pollution Prevention Act of 1990; Executive Order (E.O.) 12856 Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements; E.O. 12873 Federal Acquisition, Recycling, and Waste Prevention; E.O. 12902 Energy Efficiency and Water Conservation at Federal Facilities; and, AFI 32-7080, dated 12 May 1994. The action would not generate quantities of pollution prevention elements over and above established baseline levels. The action would not be expected to generate asbestos-containing materials (ACM) or lead-based paint (LBP) because the only demolition planned is the existing visitor control building which was constructed following the ban on use of these materials. No worker, resident, or visitor

exposure to ACM or LBP would be expected. The action would not generate quantities of these materials beyond the capability of current management procedures. For these reasons, pollution prevention, ACM or LBS are not evaluated in this EA. The environmental management analysis for this EA is limited to Environmental Restoration Program (ERP) activities.

Safety and Health. The proposed improvements to the gates would not result in any increase in safety or occupational health risks. In the event of an explosion, Base personnel would follow the procedures of the applicable Emergency Response Plan/Disaster Preparedness Plan, which would take precedence. For these reasons, safety and health are not assessed in this EA.

Socioeconomic Resources. Although the Proposed Action could result in minor increases in security forces personnel during operation of the gates, there would be no change in the number of personnel authorizations at Fairchild AFB as a result of the proposed activities. Thus, no long-term changes would be anticipated to area population, housing requirements, school enrollment, or economic factors (*i.e.*, sales volume, income, or employment). It is not anticipated that construction workers would relocate to the Spokane area as a result of the proposed activities. Thus, there would be no short-term impacts to area population, housing requirements, or school enrollment. No change to economic factors from the proposed construction activities or long-term operation would be expected. For these reasons, socioeconomic resources are not assessed in this EA.

Aesthetics. Modifications to the gates would be designed in accordance with AMC Entry Control Facilities Design Guidelines and the Fairchild AFB Architectural Compatibility Guide that ensures aesthetic compatibility with objectives of the Base General Plan. For these reasons, aesthetics is not assessed in this EA.

Environmental Justice. Executive Order (E.O.) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was issued by the President on February 11, 1994. The E.O. requires each federal agency to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. Based on the analysis conducted for this EA, it is determined that activities associated with the Proposed Action, Alternative Action, and No Action Alternative would not impose adverse environmental effects on adjacent populations. Therefore, no disproportionately high and adverse effects would occur to minority and low-income populations.

Baseline conditions to be used for environmental evaluation in the EA are assumed to be Fiscal Year 2002 (FY02). However, if FY02 data are not available, the most recent information will be used. It is estimated that the Proposed Action would begin in FY03 and be completed in FY05.

1.5 APPLICABLE REGULATORY REQUIREMENTS

Numerous construction projects would be accomplished under either the Proposed Action or Alternative Action. The construction contractor for either action would prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) to ensure compliance with Clean Water Act requirements to ensure water quality is not degraded.

1.6 ORGANIZATION OF THE DOCUMENT

This EA is organized into seven chapters.

Chapter 1 Contains a statement of the need for the action; objectives for the action; scope of the environmental review; presentation of the applicable regulatory requirements; and the organization of the EA.

Chapter 2 Identifies the selection criteria for alternatives; describes the alternatives considered but eliminated from further consideration; details the proposed alternatives; presents information on past and reasonably foreseeable future actions; identifies the preferred alternative; and summarizes the environmental impacts for all alternatives.

Chapter 3 Contains a general description of the biophysical resources and baseline conditions that potentially could be affected by the Proposed Action, Alternative Action, or No Action Alternative.

Chapter 4 Describes the environmental consequences of the Proposed and Alternative Action and the No Action Alternative, identifies potential cumulative impacts and mitigation for impacts determined to be significant.

Chapter 5 Lists preparers of this document.

Chapter 6 Lists the persons and agencies consulted during preparation of this EA.

Chapter 7 Lists the sources of the information used in preparation of this EA.

Appendix A Air Force Form 813

Appendix B Interagency and Intergovernmental Correspondence for Environmental Planning

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CHAPTER 2

DESCRIPTION OF THE ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This chapter has five sections: introduction; selection criteria used to develop the alternatives; alternatives considered; description of the proposed alternatives; and descriptions of past and reasonably foreseeable future actions at Fairchild AFB.

2.1 INTRODUCTION

The Air Mobility Command (AMC) has responsibility over airlift capabilities in the United States. The AMC has determined that improved force protection and security is needed in conjunction with improved gate capacity and traffic flow at each of its installations. It is assumed that force protection conditions (FPCON) Bravo, or higher, is the baseline for sustained operations. Assuming that the primary threat is a vehicle-borne bomb, the first line of defense is the perimeter of the Base and ECFs.

In 2002, a traffic engineering study of gate security, safety and capacity was conducted for the Base by the Military Traffic Management Command Transportation Engineering Agency and Gannett Fleming (USAF, 2002). The study characterized existing conditions with respect to gate usage, hours of operations, number of lanes, traffic data and manpower. The study identified short- and long-term recommendations to improve force protection and traffic flow at Fairchild AFB. The key design guidance for the proposed improvements was derived from:

- Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices;
- American Association of State Highway and Transportation Officials (AASHTO) Policy on Geometric Design of Highways and Streets;
- AASHTO Roadside Design Guide;
- AMC Force Protection Sustainment Team Report (March 2002);
- AMC Entry Control Facilities Design Guidelines (February 2002); and,
- Fairchild AFB Architectural Compatibility Plan (ACP).

The 2002 traffic engineering study provided:

- Development plans for each of the gates;
- Recommendations for signing, lighting, speed control; and,

- Other considerations such as plaza, canopy or tandem processing islands, vehicle arrest systems, architectural considerations, and gate security systems.

2.2 SELECTION CRITERIA FOR ALTERNATIVES

The Air Force identified selection criteria for alternatives during the initial study phase of the project. The following summarizes the Air Force selection criteria for improving force protection measures on Fairchild AFB:

- Any alternative must meet the requirements identified in FHWA, AASHTO, AMC and Fairchild AFB design guidance (Subchapter 2.1). Sufficient area and facilities for proper vehicle inspection and denial of access are required.
- Force protection improvements must result in improved gate capacity and traffic flows, particularly for processing of visitor and commercial vehicles during morning peak hours.
- Force protection improvements must be designed in consideration of any ongoing or planned transportation projects that may be associated with any of the entry points.

2.3 CURRENT BASE ACCESS CONDITIONS

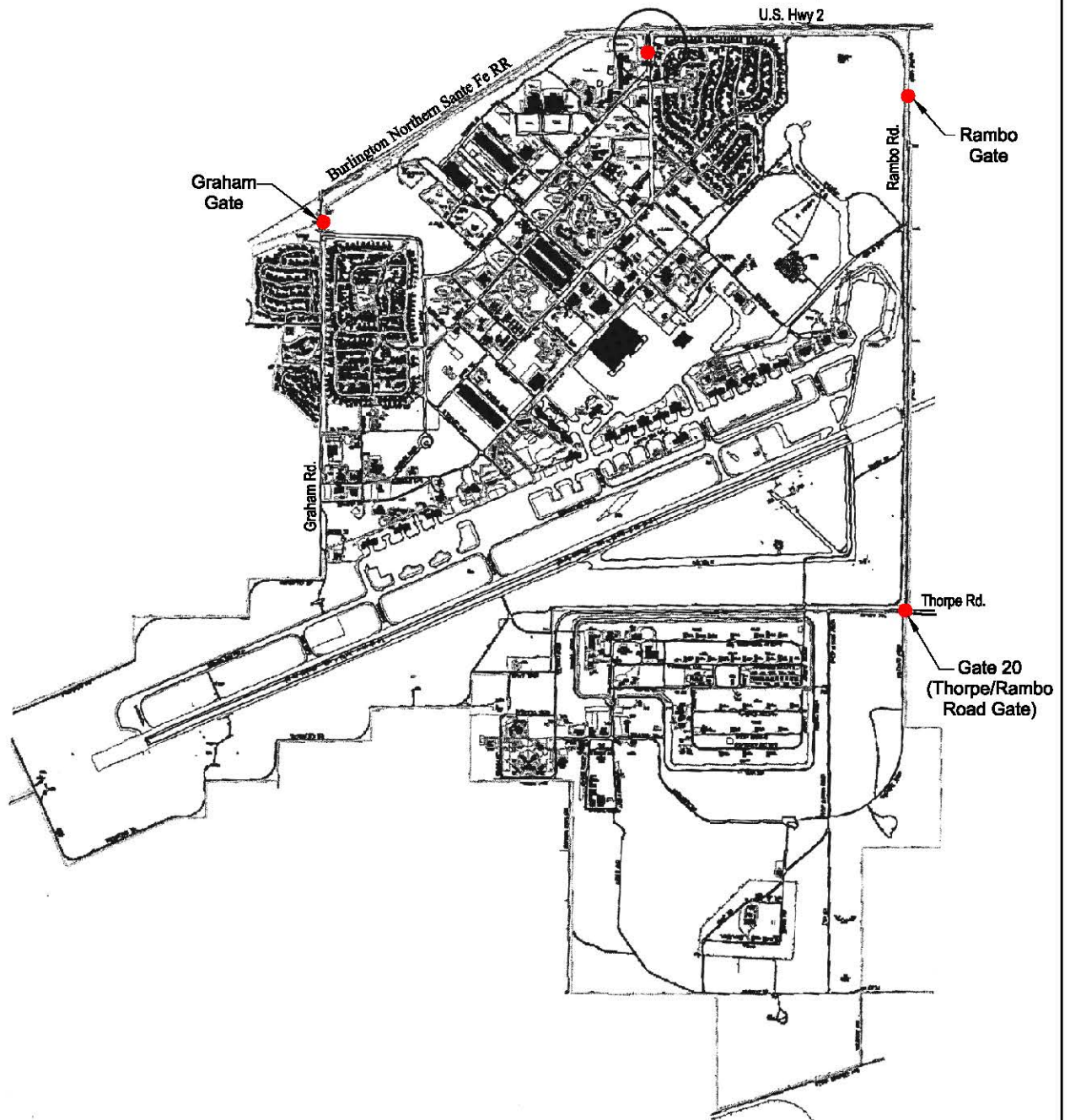
Access to Fairchild AFB is currently accomplished via three of the four gates on the Base. Access to the Base is managed by vehicle type: privately-owned vehicles (POV) which are authorized access by decal or pass (including visitor pass); buses (public transit or school buses); and, commercial vehicles (delivery trucks and contractor vehicles). Security requirements include ID checks of all vehicles and inspection of commercial vehicles, depending on threat or force protection conditions. An operational summary of the gates on Fairchild AFB is provided in Table 2-1. The locations of the gates are shown on Figure 2-1.

Table 2-1 Existing Gates on Fairchild AFB

Gate	Location	Operation	Status	Approx. No. of Vehicles ^a
Main	Mitchell Drive off U.S. Hwy 2	24 hrs/day	Open to POV (decals, passes and new visitors) and outbound commercial vehicles	965
Graham	Graham Road and Offutt Parkway (south of U.S. Hwy 2)	0600 to 1700 hrs	Inbound commercial and housing/school-related traffic	<50
Gate 20	Thorpe and Rambo Roads	Weekdays 0600 to 0800 and 1530 to 1700	POV	<50
Rambo	Rambo Road (south of U.S. Hwy 2)	Closed	Closed (open only for special events, ordnance delivery or emergencies)	--

POV privately-owned vehicles

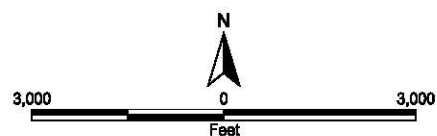
^a Reflects morning inbound vehicles during Alpha conditions



Fairchild Air Force Base

LEGEND

● Gates



Location of Gates on Fairchild AFB

Figure 2-1

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Gates on Fairchild AFB are currently experiencing inadequate queuing areas and parking capacity, and do not have sufficient space for vehicle (POV and commercial) inspection. Denial of access to certain vehicles often results in traffic delays due to lack of turnaround area at the gates. Gates also have inadequate gatehouses, lighting and speed control upon approach. These conditions often result in congestion at nearby intersections during ID checks and inspection.

2.4 ALTERNATIVES CONSIDERED, INCLUDING THE NO ACTION ALTERNATIVE

Using the criteria in Subchapter 2.2, the Air Force developed three potential alternatives, including the No Action Alternative, for providing force protection improvements at Fairchild AFB. The following sections summarize the alternatives consideration process. None of the alternatives considered were eliminated from consideration.

2.4.1 Rambo Gate for Commercial Access (Proposed Action)

The Air Force is proposing to implement physical improvements to each of the ECFs at Fairchild AFB in accordance with the recommendations identified the 2002 Traffic Engineering Study. The Proposed Action would result in construction of upgrades and new security features at the gates as well as operational changes to Base access. The Proposed Action would result in moving the access of commercial and contractor vehicles from the Graham Gate to the Rambo Gate, which would be improved with areas for vehicle inspection. The Graham Gate would be closed (no construction would occur at this gate).

2.4.2 Graham Gate for Commercial Access (Alternative Action)

As an Alternative Action, the Air Force is also considering physical improvements at the Graham Gate for commercial vehicles. Rambo Gate would continue to be closed (open only for special events) with all other gates operating in the same manner as current conditions.

2.4.3 No Action Alternative

The Air Force EIAP (32 CFR 989.8(d)) states: "...except in those rare instances where excused by law, the Air Force must always consider and assess the environmental impacts of the "no action" alternative. Under the No Action Alternative, Fairchild AFB would continue to operate its bases with existing force protection measures that are inadequate and do not meet FHWA, AASHTO, AMC and Fairchild AFB requirements described in Subchapter 2.1. The No Action Alternative would result in no construction activities or operational changes to any of the existing gates on Fairchild AFB.

2.5 DESCRIPTION OF PROPOSED ALTERNATIVES

2.5.1 Proposed Action

Based on the process described in Subchapters 2.1 through 2.3, the Air Force would construct and operate improved AT/FP measures identified in the 2002 Traffic Engineering Study for Fairchild AFB. Construction activities for the Proposed Action would begin in FY03 (calendar year 2004) and be complete in FY05 (calendar year 2006). The following paragraphs describe the gate operations proposed for Fairchild AFB.

- **Main Gate.** A new Visitor Center would be constructed and the existing parking area would be expanded at the Main Gate, which would operate with a third inbound lane. The gate would operate 24 hours per day.
- **Graham Gate.** This gate would be closed and used only for special events.
- **Gate 20.** This gate would operate with one inbound lane and one outbound reject/turnaround lane. The gate would continue to provide access for personnel on the southern portion of the Base.
- **Rambo Gate.** The Rambo Gate would operate to process commercial vehicles only. The gate would operate with two inbound inspection lanes and three holding lanes.
- **Other Improvements.** To further reduce traffic during morning peak period, the Air Force will consider improvements to signage, lighting improvements, speed control and other design considerations (tandem processing islands, vehicle arrest systems, and gate security systems).

2.5.2 Main Gate Improvements

The Air Force has initiated the preliminary improvements to the Main Gate which would include the addition of a weather canopy and guard shelters. The Proposed Action includes short term recommendations for the Main Gate that consist of improvements to signage only.

In the long term, the Air Force would continue to use the Main Gate as the main entrance to Fairchild AFB. A new Visitor Center, expanded parking area and a third inbound processing land from U.S. Highway 2 to Poplar Avenue would be constructed. The existing, former elementary school would be demolished prior to Main Gate construction as a separate action. The Fairchild Highway leg at Mitchell Drive would be removed and a new rotary intersection (double lane modern roundabout) would be installed at the intersection of Mitchell Drive and Poplar Avenue. Accommodations for pedestrians and bicycles would be provided. An overwatch and vehicle arresting system would be provided. Hardwire communication and computer network capabilities between the guard booth, gatehouse and visitor center. Monitoring and recording capabilities would be provided for the Base Law Enforcement Desk. Removable bollards would be installed to create serpentine entry for high force protection conditions (FPCON).

2.5.3 Rambo Gate Improvements

The short-term recommendations for the Rambo Gate would include: relocating commercial operations from Graham Gate to the Rambo Gate, and utilizing the outbound lane as a second inbound lane (with inspections performed at the current gate location).

In the long term, the Air Force would maintain the existing longitudinal location for the gate along Rambo Road, and widen the ECF on Base property west of Rambo Road. Three holding lanes, two inspection lanes, and one outbound lane would be developed. The gate would be reconstructed with an inspection pit, cover, new gatehouse, guard booths and islands. A gate or pop-up barrier would serve as an overwatch for the inbound and outbound lanes. A loop detector would be provided in order to automate the opening of the gate for outbound traffic. Manual override would be provided in case of a lock-down situation. Gatehouses and guard booths would be interconnected for communications and computer networking. Surveillance equipment and infrastructure would be installed to communicate with the Base Law Enforcement Desk.

2.5.4 Graham Gate Improvements

The short-term recommendations for the Graham Gate consist of removal of Jersey barriers, allowing trucks and commercial vehicles to exit from this gate in addition to the Main Gate, installing speed reduction signing and gate operating hour information on the Graham Road approach to Graham Gate, and (during increased security conditions) relocating commercial operations to the Rambo Road Gate.

In the long term, the Air Force would close the Graham Gate and relocate commercial operations to the Rambo Road Gate.

2.5.5 Gate 20 (Thorpe/Rambo Road) Improvements

The short-term recommendations for Gate 20 would include: signage improvements; painting of the double center line to lead motorists around the curve; installing a Type III Barricade, signs, and security cameras; strengthening of the fence; and, improving the gatehouse with heating/air conditioning and portable restroom. The Air Force would request that the Pierce County Department of Public Works expand and improve the gravel turnaround shoulder area to the east of the gatehouse.

Long-term improvements at Gate 20 would include: construction of a new gatehouse with restroom facility; and, increasing the radius of the curve (intersection of Rambo and Thorpe Roads) to provide for a more gradual turn.

2.5.6 Construction Projects

The Air Force would accomplish four separate construction projects to support the AT/FP project at Fairchild AFB. Table 2-2 lists the size of the Proposed Action project in square feet as well as the estimated project construction duration for each gate.

Table 2-2 Construction Project Information, Proposed Action

Project	Size (Square Feet)	Start Date
Main Gate	209,652	9 months
Rambo Gate	340,992	9 months
Graham Gate (to be closed)	--	--
Gate 20	115,200	9 months
Total	665,844	~ 3 years

Note: Size depicts total surface area for the construction project.

It is anticipated that construction at each gate would occur sequentially. Based on funding, it is also possible that construction activities could occur simultaneously at all gates. Construction activities would be scheduled to enable continued and modified operation and access at the gate during groundwork.

2.5.7 Alternative Action

As an alternative to the Proposed Action, the Air Force would not develop the Rambo Gate for commercial operations. The Alternative Action would result in continuation of commercial vehicle entry at the Graham Gate. Improvements to the Graham Gate would include: construct a two-lane, inbound roadway for semi-trailers (under increased security conditions), construction of a covered inspection area, gatehouse, restroom, and pop-up barrier as an overwatch. The inspection pit would contain adequate technologies to inspect the underside of semi-trailers. The existing inbound lanes would be used for processing and inspection of smaller trucks and contractor vehicles with passes. The gate would also be open to outbound trucks. The traffic control of the intersection of Graham Road and Offutt Parkway would be modified, and the existing parking lot north of the gate would be eliminated. Table 2-3 lists the size of the Alternative Action project in square feet as well as the estimated project construction duration for each gate.

Table 2-3 Construction Project Information, Alternative Action

Project	Size (Square Feet)	Start Date
Main Gate	209,652	9 months
Rambo Gate	--	--
Graham Gate	71,920	9 months
Gate 20	115,200	9 months
Total	396,772	~ 3 years

Note: Size depicts total surface area for the construction project.

2.5.8 No Action Alternative

Fairchild AFB would continue to operate the perimeter and ECFs under existing conditions. The number of active duty military, Reserve Associate military, government

civilian, and contractor personnel at the Base would remain at current levels. No ECF or perimeter security construction or other improvements would occur.

2.6 DESCRIPTION OF PAST AND REASONABLY FORESEEABLE FUTURE ACTIONS

Complete environmental impact analysis of the Proposed Action and alternatives must consider cumulative impacts due to other actions. A cumulative impact, as defined by the CEQ (40 CFR 1508.7), is the “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

The Air Force has identified past and reasonably foreseeable actions that could occur on Fairchild AFB. The only project that would occur during the same time period as the Proposed Action is improvement to the Main Gate. The construction projects that would support basing of the 767 aircraft at Fairchild AFB have not been identified at this time and would occur after the construction period of the Proposed Action. These projects are identified in Table 2-4 and described herein.

Table 2-4 Cumulative Projects, Fairchild AFB

Project	Size (Square Feet)	Start Date	Duration
Demolish/Construct Elementary School	118,656	FY03	4 months
Add/Alter Main Gate	1,220	FY03	4 months
767 Basing Construction Projects	NA	FY06	24 months
Total	119,876	NA	NA

Note: Size depicts total surface area for the facility. Start date reflected as FY. NA=not available at this time.

Demo/Construct Elementary School. The Air Force is in the process of constructing a replacement elementary school near the Housing Area on Fairchild AFB. Demolition of the existing elementary school southwest of the Main Gate is planned for FY03.

Add/Alter Main Gate. To improve safety and security of the Main Gate during increased security conditions, the Air Force is planning to construct a weather canopy and guard shelters at the Main Gate, and alter the inbound roadway to accommodate an additional lane. This project will include utilities, paving, communications and other site work to support these structures. An EA and FONSI for this action were completed in 2002 (USAF, 2002b).

767 Basing Construction Projects. In support of the planned basing of up to thirty-two 767 aircraft at Fairchild AFB, facility construction projects in the flightline and operational support areas are planned.

2.7 IDENTIFICATION OF THE PREFERRED ALTERNATIVE

The preferred alternative is the Proposed Action which includes: construction of improved entry control facilities at the Main Gate; development of the Rambo Gate for commercial access; improvements to the Graham Gate for school-related use; and, improvements to Gate 20 for continued POV use on a limited basis.

2.8 COMPARISON OF ENVIRONMENTAL EFFECTS OF ALL ALTERNATIVES

Table 2-5 summarizes the impacts of the Proposed Action, Alternative Action, and No Action Alternatives.

Table 2-5 Summary of Environmental Impacts for the Proposed Action, Alternative Action, and No Action Alternative

Resource (Applicable Subchapter)	Proposed Action	Alternative Action	No Action Alternative
Mission (4.1)	The Proposed Action would improve the Base's ability to accomplish its mission.	The Proposed Action would improve the Base's ability to accomplish its mission.	No change to the mission would result.
Noise (4.2)	Construction noise may have a short-term impact on occupants in two residences along Rambo Road. Temporary interior noise levels from 57 to 62 dB could annoy less than 15 percent of nearby persons and cause temporary disruption of speech during the noise event. The impact from operational noise from up to 41 inbound peak hour commercial vehicles along Rambo Road would not be considered significant. Operational noise at the Graham Gate would be reduced from baseline conditions as a result of relocating commercial vehicle access to the Rambo Gate.	Construction noise may have a short-term impact on occupants at military family housing and the elementary school in the vicinity of the Graham Gate. Temporary interior noise levels from 57 to 62 dB could annoy less than 15 percent of nearby persons and cause temporary disruption of speech during the noise event. Operational noise from up to 41 inbound peak hour commercial vehicles at the Graham Gate would be the same as baseline conditions, impacts would not be considered significant. Operational noise at the Graham Gate would be the same as baseline conditions and are not considered significant.	No significant impacts occur from baseline activities.
Air Quality (4.3)	The greatest increase for any of the criteria air pollutants would be 6.56 tons per year (tpy) for particulate matter (PM ₁₀), which equates to 0.094 percent of the baseline PM ₁₀ emissions within the air quality control region (AQCR). These emissions are not considered significant, and an USEPA Conformity Determination would not be required.	Impacts to air quality would be the same as described for the Proposed Action.	No significant impacts occur from baseline activities.
Biological Resources (4.4)	The Proposed Action would result in loss of approximately 6.5 acres of ruderal/non-native grassland vegetation. Construction activities would occur within developed, maintained areas with extant, highly modified and disturbed landscape, and would not substantially change habitat for plant or animal species. Construction would not result in any impacts to threatened or endangered species that occur on Fairchild AFB. The Proposed Action would not be located near nesting areas for grasshopper sparrow, a Washington sensitive species. There are no wetlands located in the area of Base gates.	The Alternative Action would result in loss of approximately 4.5 acres of ruderal/non-native grassland vegetation. Impacts to biological resources that would result from the Alternative Action would be the same as described for the Proposed Action.	No significant impacts occur from baseline activities.

Resource (Applicable Subchapter)	Proposed Action	Alternative Action	No Action Alternative
Cultural Resources (4.5)	Archaeological Resources. No NRHP-eligible archaeological resources are located within or adjacent to the Proposed Action region of influence (ROI) for Fairchild AFB. The probability is low that undisturbed, significant archaeological resources, including human graves, will be discovered on Fairchild AFB during construction. The action would be managed in accordance with the Fairchild AFB CRMP including procedures that must be followed in the event of inadvertent discovery of cultural resources. Historical Resources. No NRHP-eligible historical resources are located within the ROI for Fairchild AFB. The Proposed Action would not result in demolition or modifications to any historic properties or structures. The Proposed Action would not result in impacts to historical resources. Native American Concerns. No Native American concerns have been identified for Fairchild AFB. The Proposed Action would be implemented in accordance with the Fairchild AFB ICRMP, which specifies notification procedures applicable to Native American groups. With compliance to the ICRMP, the Proposed Action would not result in impacts to Native American concerns.	The impacts to cultural resources from the Alternative Action would not be the same as described for the Proposed Action.	No significant impacts occur from baseline activities.

Resource (Applicable Subchapter)	Proposed Action	Alternative Action	No Action Alternative
Utilities and Infrastructure (4.6)	Transportation Systems. The Proposed Action would result in a temporary and localized increase in construction-related traffic. The Proposed Action would be expected to lessen, and not worsen, congestion at the gates during peak morning hours. Solid Waste Management. Construction and demolition debris disposal would not result in impacts to the remaining capacity of the permitted off-Base landfill. Solid waste generated by personnel would not change as a result of the Proposed Action. Impacts from solid waste disposal would not be considered significant.	Impacts to transportation systems and solid waste management would be the same as the Proposed Action.	No significant impacts occur from baseline activities.
Environmental Management (4.7)	Proposed construction at Gate 20 would be located in an area that is within proximity to Environmental Restoration Program (ERP) sites FT-01, FT-02, SW-7 and SW-12. Facilities design and construction activities at the Gate 20 would be coordinated with the Base Environmental Flight and Bioenvironmental Engineering to ensure that construction would avoid interference with any ongoing ERP investigation and remediation work and would not worsen the condition of this site. Before construction activities begin, the contractor would be required to coordinate with the Environmental Flight and prepare a work plan and health and safety plan in case contamination is encountered during excavation activities. In the event any contaminated soil is encountered, the construction contractor will be required to excavate, properly dispose any contaminated soil and replace excavated soil with clean soil. With implementation of best management practices, impacts to ERP sites would be avoided.	Impacts to environmental management of ERP sites would be the same as the Proposed Action.	No significant impacts occur from baseline activities.

Resource (Applicable Subchapter)	Proposed Action	Alternative Action	No Action Alternative
Hazardous Materials and Wastes	The contractor would comply with all regulatory guidance for the use and disposal of hazardous materials and wastes during construction activities. The volumes of hazardous materials purchased for, and hazardous wastes generated by, operation of the gates would be negligible. It is not anticipated any new hazardous materials would be needed. The existing hazardous materials handling and hazardous waste disposal processes and procedures would accommodate the activities associated with gate operation.	Impacts to hazardous materials and wastes would be the same as the Proposed Action.	No significant impacts occur from baseline activities.

CHAPTER 3

DESCRIPTION OF THE AFFECTED ENVIRONMENT

3.1 MISSION

Fairchild AFB is home to the 92nd Air Refueling Wing whose mission is to provide immediately responsive KC-135 air refueling and airlift support to the United States and friendly forces. The mission of Fairchild AFB is to ensure the highest standards in safety, training, and combat capability. Tenant organizations at Fairchild AFB include the 336th Combat Crew Training Wing, 36th Rescue Flight, 141st Air Refueling Wing and 2nd Support Squadron (Air Combat Command).

3.2 NOISE

3.2.1 Background Information

The characteristics of sound include parameters such as amplitude (loudness), frequency (pitch), and duration. Sound varies over an extremely large range of amplitudes. The decibel, a logarithmic unit that accounts for the large variations in amplitude, is the accepted standard unit for describing levels of sound.

Different sounds have different frequency contents. Because the human ear is not equally sensitive to sound at all frequencies, a frequency-dependent adjustment, called A-weighting and expressed as dBA, has been devised to measure sound similar to the way the human hearing system responds. The adjustments in amplitude, established by the American National Standards Institute (ANSI S1.4 1983), are applied to the frequency content of the sound. Figure 3-1 depicts typical A-weighted sound pressure levels for various sources. For example, 65 dBA is equivalent to normal speech at a distance of 3 feet.

Noise is defined as sound that is undesirable because it interferes with speech and hearing, is intense enough to damage hearing, or is otherwise annoying. Noise levels often change with time. To compare sound levels over different time periods, several descriptors have been developed that take into account this time-varying nature. These descriptors are used to assess and correlate the various effects of noise on humans.

The DNL metric is a measure of the total community noise environment. DNL is the average A-weighted sound level over a 24-hour period, with a 10 dBA adjustment added to the nighttime levels (between 10:00 p.m. and 7:00 a.m.). This adjustment is an effort to account for increased human sensitivity to nighttime noise events. DNL was endorsed by the United States Environmental Protection Agency (USEPA) for use by federal agencies and has been adopted by the Department of Housing and Urban Development, FAA, and DoD. DNL is an accepted unit for quantifying annoyance to humans by general environmental noise, including aircraft noise. The Federal Interagency Committee on Urban Noise (FICON) developed land use compatibility guidelines for noise (USDOT 1980). Compatible or incompatible land use is determined by comparing the predicted DNL level at a site with the recommended land uses.

Methods used to quantify the effects of noise, such as annoyance, speech interference, and health and hearing loss, have undergone extensive scientific development during the past several decades. The most reliable measures are noise-induced annoyance and hearing loss. The effects of noise exposure are summarized in the following paragraphs.

Annoyance. Noise annoyance is defined by the USEPA as any negative subjective reaction to noise by an individual or group. Table 3-1 presents the results of over a dozen studies of the relationship between noise and annoyance levels. This relationship has been suggested by the National Academy of Sciences (1977) and was reevaluated (Fidell *et al.* 1988) for use in describing people's reaction to semi-continuous (transportation) noise. These data are shown to provide a perspective on the level of annoyance that might be anticipated. For example, 15 to 25 percent of persons exposed on a long-term basis to DNL of 65 to 70 dBA would be expected to be highly annoyed by noise events.

Table 3-1 Percentage of Persons Highly Annoyed by Noise Exposure

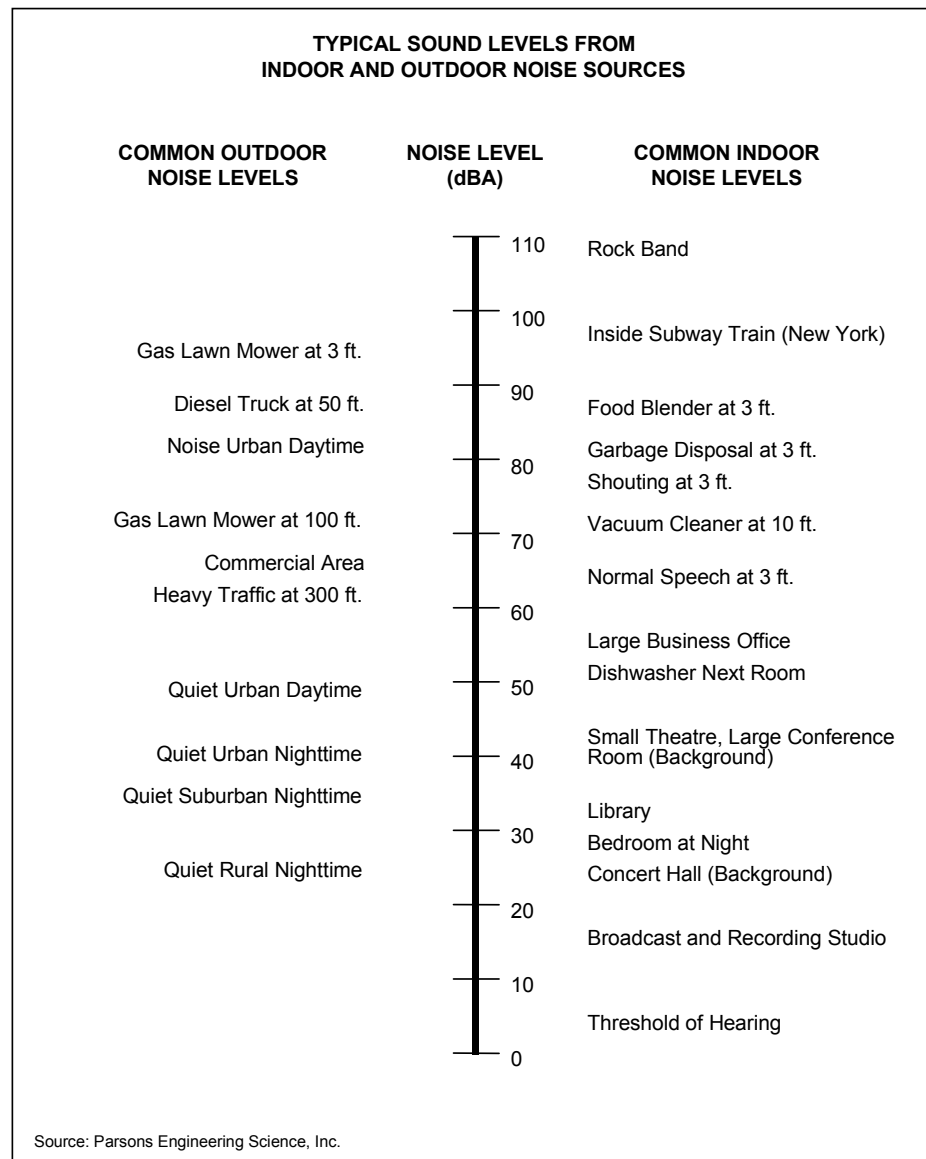
Noise Exposure Zone (DNL dBA)	Percentage of Persons Highly Annoyed
<65	<15
65-70	15-25
70-75	25-37
75-80	37-52
>80	61

Note: Noise impacts on individuals vary. The "low" numbers above indicate individuals with higher tolerance of noise while the "high" numbers indicate individuals with higher sensitivity to noise.

Source: Adapted from NAS 1977.

Speech Interference. One of the ways noise affects daily life is by prevention or impairment of speech communication. In a noisy environment, understanding speech is diminished when speech signals are masked by intruding noises. Reduced speech intelligibility also may have other effects. For example, if speech understanding is interrupted, performance may be reduced, annoyance may increase, and learning may be impaired. Elevated noise levels can interfere with speech, causing annoyance or communication difficulties. Based on a variety of studies, DNL 75 dBA indicates a good probability for frequent speech disruption. This level produces ratings of "barely acceptable" for intelligibility of spoken material. Increasing the level of noise to 80 dB reduces the intelligibility to zero, even if people speak in loud voices.

Figure 3-1 Typical A-Weighted Noise Levels



Hearing Loss. Hearing loss is measured in decibels and refers to a permanent auditory threshold shift of an individual's hearing. The USEPA (USEPA 1974) recommended a limiting daily equivalent energy value or equivalent sound level of 70 dBA to protect against hearing impairment over a period of 40 years. This daily energy average would translate into a DNL value of approximately 75 dBA or greater. Based on a USEPA study, hearing loss is not expected in people exposed to a DNL of 75 dBA or less (USEPA 1974). The potential for hearing loss involves direct exposure to DNL levels above 75 dBA on a regular, continuing, long-term basis. FICON states that hearing loss due to noise: 1) may begin to occur in people exposed to long-term noise at or above a DNL of 75 dBA; 2) will not likely occur in people exposed to noise between a DNL of 70 and 75 dBA; and 3) will not occur in people exposed to noise less than a DNL of 70 dBA (USDOT 1980).

An outdoor DNL of 75 dBA is considered the threshold above which the risk of hearing loss is evaluated. Following guidelines recommended by the Committee on Hearing, Bioacoustics, and Biomechanics, the average change in the threshold of hearing for people exposed to DNL equal to or greater than 75 dBA was evaluated. Results indicated that an average of 1 dBA hearing loss could be expected for people exposed to DNL equal to or greater than 75 dBA. For the most sensitive 10 percent of the exposed population, the maximum anticipated hearing loss would be 4 dBA. These hearing loss projections must be considered conservative as calculations are based on an average daily outdoor exposure of 16 hours (7:00 a.m. to 10:00 p.m.) over a 40-year period. It is doubtful any individual would spend this amount of time outdoors within the DNL equal to or greater than 75 dBA noise exposure area (USAF 1997d).

3.2.2 Existing Noise Levels

Aircraft operations are the primary source of noise at Fairchild AFB. Aircraft activities include aircraft and aircraft maintenance operations. During periods of no flying activity, noise results primarily from aircraft maintenance and shop operations, ground traffic movement, occasional construction, and similar sources. This noise is almost entirely restricted to the Base itself and is comparable to sounds that occur in typical communities. It is during periods of aircraft ground or flight activity that the noise environment changes.

Ambient noise at most of the gates would range from approximately 50 dBA (quiet urban daytime) to about 70 dBA (noisy urban daytime) when aircraft operations are not occurring. The existing noise level at the gates is estimated as follows:

- Less than the 60 dBA at the Main and Graham Gates; and,
- From 60 to 65 dBA at the Rambo Gate and Gate 20.

Interior noise levels in area buildings would be reduced by approximately 18 to 27 dB due to the noise level reduction (NLR) properties of the structures' construction materials (USDOT, 1992).

FICON developed land use compatibility guidelines for noise in terms of DNL (USDOT 1980). DNL is the metric used by the Air Force in determining noise impacts of military airfield operations for land use planning. Air Force land use compatibility guidelines (relative to DNL values) are documented in the Air Installation Compatible Use Zone (AICUZ) *Program Manager's Handbook* (USAF 1999). Four noise zones are used in AICUZ studies to identify noise impacts from aircraft operations. These noise zones range from DNL of 65 dBA to DNL of 80 dBA. For example, it is recommended that no residential uses, such as homes, multifamily dwellings, dormitories, hotels, and mobile home parks be located where the noise is expected to exceed a DNL of 65 dBA. If noise sensitive structures are located in areas within a DNL range of 65 to 75 dBA, the structures should be designed to achieve a 25 to 30 dBA interior noise reduction. For outdoor activities, the USEPA recommends DNL of 55 dBA as the sound level below which there is no reason to suspect that the general population will be at risk from any noise effects (USEPA 1974).

Air Force policy for many years has been to implement, where feasible, NLR measures in on-Base residential and public use buildings. NLR measures are intended to reduce indoor noise levels to DNL 45 dBA or less. Recommended NLR for housing is 25 dBA for units in the DNL 65 to 70 dBA noise zone and 30 dBA for those in the DNL 70 to 75 dBA zone. Buildings constructed prior to implementation of the Noise Reduction Policy were not necessarily built to NLR standards. Since implementation of the NLR standards, all new buildings are designed and constructed to comply with the appropriate NLR standards (USAF 1978).

3.3 AIR QUALITY

3.3.1 Air Pollutants and Regulations

Air quality in any given region is measured by the concentration of various pollutants in the atmosphere, typically expressed in units of parts per million (ppm) or in units of micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Air quality is not only determined by the types and quantities of atmospheric pollutants, but also by surface topography, size of the air basin, and by prevailing meteorological conditions.

The Clean Air Act (CAA), as amended in 1977 and 1990, provides the basis for regulating air pollution to the atmosphere. Different provisions of the CAA apply depending on where the source is located, which pollutants are being emitted, and in what amounts. The CAA required the USEPA to establish ambient ceilings for certain criteria pollutants. These criteria pollutants are usually referred to as the pollutants for which the USEPA has established National Ambient Air Quality Standards (NAAQS). The ceilings were based on the latest scientific information regarding the effects a pollutant may have on public health or welfare. Subsequently, the USEPA promulgated regulations that set NAAQS. Two classes of standards were established: primary and secondary. Primary standards define levels of air quality necessary, with an adequate margin of safety, to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards define levels of air quality necessary to protect public welfare (e.g., decreased

visibility, damage to animals, crops, vegetation, wildlife, and buildings) from any known or anticipated adverse effects of a pollutant.

Air quality standards are currently in place for six pollutants or "criteria" pollutants: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), sulfur oxides (SO_x, measured as sulfur dioxide [SO₂]), lead (Pb), and particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM₁₀). There are many suspended particles in the atmosphere with aerodynamic diameters larger than 10 micrometers. The collective of all particle sizes is commonly referred to as total suspended particulates (TSP). TSP is defined as particulate matter as measured by the methods outlined in 40 CFR Part 50, Appendix B. The NAAQS are the cornerstone of the CAA. Although not directly enforceable, they are the benchmark for the establishment of emission limitations by the states for the pollutants USEPA determines may endanger public health or welfare.

Ozone (ground-level ozone), which is a major component of "smog," is a secondary pollutant formed in the atmosphere by photochemical reactions involving previously emitted pollutants or precursors. Ozone precursors are mainly nitrogen oxides (NO_x) and volatile organic compounds (VOC). NO_x is the designation given to the group of all oxygenated nitrogen species, including nitric oxide (NO), NO₂, nitrous oxide (N₂O), and others. However, only NO, NO₂, and N₂O are found in appreciable quantities in the atmosphere. VOCs are organic compounds (containing at least carbon and hydrogen) that participate in photochemical reactions and include carbonaceous compounds except metallic carbonates, metallic carbides, ammonium carbonate, carbon dioxide (CO₂), and carbonic acid. Some VOCs are considered non-reactive under atmospheric conditions and include methane, ethane, and several other organic compounds.

As noted above, ozone is a secondary pollutant and is not directly emitted from common emissions sources. Therefore, to control ozone in the atmosphere, the effort is made to control NO_x and VOC emissions. For this reason, NO_x and VOCs emissions are calculated and reported in emission inventories.

The CAA does not make the NAAQS directly enforceable. However, the Act does require each state to promulgate a State Implementation Plan (SIP) that provides for "implementation, maintenance, and enforcement" of the NAAQS in each Air Quality Control Region (AQCR) in the state. The CAA also allows states to adopt air quality standards more stringent than the federal standards.

The Washington Department of Ecology (WDOE) administers the state of Washington pollution program under authority of Chapter 43.21A, Department of Ecology, Revised Code of Washington. The Spokane County Air Pollution Control Agency (SCAPCA) has regulatory authority for emissions in the Fairchild AFB area. Table 3-2 lists national and Washington state ambient air quality standards.

Table 3-2 National and State Ambient Air Quality Standards

Criteria Pollutant	Averaging Time	Primary NAAQS^{a,b,c}	Secondary NAAQS^{a,b,d}	Washington Standards^{a,b}
Carbon Monoxide	8-hour 1-hour	9 ppm (10 mg/m ³) 35 ppm (40 mg/m ³)	No standard No standard	9 ppm (10 mg/m ³) 35 ppm (40 mg/m ³)
Lead	Quarterly	1.5 µg/m ³	1.5 µg/m ³	1.5 µg/m ³
Nitrogen Dioxide	Annual	0.05 ppm (100 µg/m ³)	0.05 ppm (100 µg/m ³)	0.05 ppm (100 µg/m ³)
Ozone	1 hour ^e	0.12 ppm (235 µg/m ³)	0.12 ppm (235 µg/m ³)	0.12 ppm (235 µg/m ³)
PM ₁₀	Annual 24-hour	50 µg/m ³ 150 µg/m ³	50 µg/m ³ 150 µg/m ³	50 µg/m ³ 150 µg/m ³
Total Suspended Particulates	Annual 24-hour	No standard No standard	No standard No standard	60 µg/m ³ 150 µg/m ³
Sulfur Oxides (measured as SO ₂)	Annual 24-hour 3-hour 1-hour ^e 1-hour ^f	0.03 ppm (80 µg/m ³) 0.14 ppm (365 µg/m ³) No standard No standard No standard	No standard No standard 0.50 ppm (1,300 µg/m ³) No standard No standard	0.02 ppm (55 µg/m ³) 0.10 ppm (265 µg/m ³) No standard 0.25 ppm (660 µg/m ³) 0.40 ppm (1,050 µg/m ³)

PM₁₀ Particles with aerodynamic diameters less than or equal to a nominal 10 micrometers

- ^a National and Washington state standards, other than those based on an annual or quarterly arithmetic mean, are not to be exceeded more than once per year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is less than or equal to one.
- ^b The NAAQS and Washington state standards are based on standard temperature and pressure of 25 degrees Celsius and 760 millimeters of mercury, respectively. Units of measurements are parts per million (ppm) and micrograms per cubic meter (µg/m³).
- ^c National Primary Standards: The levels of air quality necessary to protect the public health with an adequate margin safety. Each state must attain the primary standards no later than three years after the state implementation plan is approved by the USEPA.
- ^d National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. Each state must attain the secondary standards within a "reasonable time" after the state implementation plan is approved by the USEPA.
- ^e Not to be exceeded more than twice in seven consecutive days.
- ^f Not to be exceeded more than once per year throughout the state of Washington and never to be exceeded within the Spokane County Air Pollution Control Agency region.

Based on the requirements outlined in EPA's general conformity rule published in 58 Federal Register 63214 (November 30, 1993) and codified at 40 CFR Part 93, Subpart B (for federal agencies), a conformity analysis is required to analyze whether the applicable criteria air pollutant emissions associated with the project equal or exceed the threshold emission limits that trigger the need to conduct a formal conformity determination. The intent of the conformity rule is to encourage long range planning by evaluating the air quality impacts from federal actions before the projects are undertaken. This rule establishes an elaborate

process for analyzing and determining whether a proposed project in a nonattainment area conforms to the SIP and federal standards.

3.3.2 Regional Air Quality

The fundamental method by which the USEPA tracks compliance with the NAAQS is the designation of a particular region as “attainment” or “nonattainment”. Based on the NAAQS, each state is divided into three types of areas for each of the criteria pollutants. The areas are:

- Those areas that are in compliance with the NAAQS (attainment);
- Those areas that do not meet the ambient air quality standards (nonattainment); and
- Those areas where a determination of attainment/nonattainment cannot be made due to a lack of monitoring data (unclassifiable – treated as attainment until proven otherwise).

Generally, areas in violation of one or more of the NAAQS are designated nonattainment and must comply with stringent restrictions until all of the standards are met. In the case of O₃, CO, and PM₁₀, USEPA divides nonattainment areas into different categories, depending on the severity of the problem in each area. Each nonattainment category has a separate deadline for attainment and a different set of control requirements under the SIP. According to federal regulations (40 CFR 81.341), all 13 counties in the AQCR 62 are nonattainment for PM₁₀, unclassifiable/attainment for CO and ozone, and cannot be classified or better than national standards for NO₂ and SO₂.

3.3.3 Baseline Air Emission

An air emissions inventory is an estimate of total mass emissions of pollutants generated from a source or sources over a period of time, typically a year. Accurate air emissions inventories are needed for estimating the relationship between emissions sources and air quality. Quantities of air pollutants are generally measured in pounds (lb) per year or tons per year (tpy). All emission sources may be categorized as either mobile or stationary emission sources. Stationary emission sources may include boilers, generators, fueling operations, industrial processes, and burning activities, among others. Mobile emission sources typically include vehicle operations.

The calendar year (CY) 1999 air emissions inventory summary for the AQCR 62, which includes reported permitted stationary and mobile air emission sources, is presented in Table 3-3.

Table 3-3 Baseline Air Emissions

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	NO _x (tpy)	SO _x (tpy)	PM ₁₀ (tpy)
AQCR CY99 Totals	26,547	1,276	2,508	6,893	6,970

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant.

Source: AIRData 2003.

3.4 BIOLOGICAL RESOURCES

3.4.1 Vegetation and Wildlife

Fairchild AFB has approximately 1,000 acres of undeveloped land that contains open grass fields, stands of ponderosa pines, wetland areas, native grassland and shrubs, and areas of mixed native and non-native grasses and weeds. Non-native landscaping has removed historic vegetative cover (USAF 2002c).

Rows of mature hardwood and evergreen trees grow along roadways, and several types of shrubs grow along buildings. Wildlife habitat and species present are typical of urban areas, with no large mammals, few small mammals (mostly deer mice, voles, and moles), and bird communities dominated by fruit-eating or omnivorous species, such as American robin, European starling, cedar waxing, and purple finch (USAF 2002c).

3.4.2 Threatened, Endangered, and Special Status Species

In 1994, a plant species, the Federal-listed endangered and Washington-listed threatened Spalding's catchfly was discovered in the survivor training area on the southern portion of Fairchild AFB. This area is not being grazed and is being monitored for site conditions and plant populations. The Air Force has implemented a management plan for this species. Noxious weed control and habitat restoration/maintenance are ongoing in the management area for Spalding's catchfly.

Grasshopper sparrows, a Washington-listed Monitor species (no federal listing), are the only known state-sensitive species that breed on Fairchild AFB. There are no known nesting locations for this species at or near any of the Base gates.

Habitat for threatened, endangered, or special status species is not found in the proposed construction areas at the Base gates.

3.4.3 Wetlands

Over 300 acres of wetlands on Fairchild AFB occur in the southern portion of the Base. Referred to as conservancy wetlands, these areas are considered highest quality wetlands due to surface water connections, native plant diversity, and wildlife habitat. The Air Force has prepared a Wetlands Management Plan to guide the management of wetlands that should be preserved. There are no wetlands within the area of construction at the Base gates.

3.5 CULTURAL RESOURCES

Cultural resources include prehistoric and historical archaeological sites, buildings, structures, districts, artifacts, objects, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, or religious purposes. Pursuant to Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and its implementing regulations at 36 CFR 800, federal agencies must take into consideration the potential effect of an undertaking on "historic properties," which refers to cultural resources listed in, or eligible for inclusion in, the National Register of Historic Places (NRHP). Sites not yet evaluated are considered potentially eligible for inclusion in the NRHP and, as such, are afforded the same regulatory consideration as nominated properties.

Numerous laws and regulations require federal agencies consider the effects of a Proposed Action on cultural resources. These laws and regulations stipulate a process for compliance, define the responsibilities of the federal agency proposing the action, and prescribe the relationship between other involved agencies (e.g., State Offices of Historic Preservation, the Advisory Council on Historic Preservation).

Only those potential historic properties determined to be significant under cultural resource legislation are subject to protection or consideration by a federal agency. The quality of significance is considered in terms of applicability of the NRHP criteria. Significant cultural resources, either prehistoric or historic in age, are referred to as "historic properties."

Cultural resources on Air Force installations are managed in accordance with environmental laws that include: AFI 32-7065, *Cultural Resources Management*; 32 CFR 989; Executive Order 11593 of 1971; National Historic Preservation Act of 1966, as amended; Archaeological and Historic Preservation Act (AHPA) of 1974 (Public Law [PL] 93-291); the Archaeological Resources Protection Act (ARPA) of 1979 (PL 96-95); the American Indian Religious Freedom Act (AIRFA) of 1978 (PL 95-341); and, the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 (PL 101-601). In addition, any proposed undertaking must comply with the State Historic Preservation Office (SHPO) guidelines for the States of California, Nevada and Oregon.

For this analysis, the Region of Influence (ROI) is synonymous with the Area of Potential Effect (APE), as defined by the NHPA. The ROI for the analysis of cultural resources includes the area of proposed construction at each of the Base gates on Fairchild AFB.

The identification of cultural resources potentially impacted by the Proposed Action was accomplished by reviewing the 2001 Fairchild AFB Integrated Cultural Resources Management Plan (ICRMP) (USAF 2001).

A total of five cultural resource investigations have been conducted on Fairchild AFB since 1989, as identified on Table 3-4.

Table 3-4 Previous Cultural Resources Investigations Within or Adjacent to the Fairchild AFB Region of Influence

Year	Study	Cultural Resources Identified
1989	13 Parcels on Southern Part of Main Base (Eastern Washington University)	3 historic archaeological sites
1990	Main Base, Cheney Housing (Spokane City/County Historic Preservation Office)	54 buildings or building groups
1996	Baseline Inventory of Cold War Material Culture at Fairchild AFB (Mariah Associates)	Cold War Resources
1998	Southwest Corner of Base – Raymond Gee Well (Spokane City/County Historic Preservation Office)	Raymond Gee hand dug well
1999	Bomber Alert Facility Bldg 2080 (Archaeological and Historical Services)	Bldg 2080

Source: USAF, 2001

3.5.1 Archaeological Resources

Archaeological resources are prehistoric or historic places where human activity has measurably altered the earth or left deposits of physical remains. Archaeological resources may include some surface deposits and below ground (subsurface) deposits. Prehistoric archaeological resources may include village sites, campsites, lithic scatters, burials, hearths (or hearth features), processing sites, caves, and rock shelters. Historical archaeological resources may include farmsteads, roads, privies, trash deposits and/or middens.

Fairchild AFB was constructed on high, relatively rocky land that was reported to be practically devoid of water. No settler activity is recorded for the Base. Only three houses existed there in 1941 when the land was turned over to the military, and all three houses have been removed. The probability is low that undisturbed, significant archaeological resources, including human graves, will be discovered on Fairchild AFB during future construction (USAF 2001).

The Fairchild AFB ICRMP Update (USAF 2001) does not identify any archaeological sites on the Base. Two farmsteads, the Raymond Gee well, and the Silver Lake Water Canal are not considered to be eligible for listing on the NRHP. Two prehistoric archaeological sites have been registered with the Washington State Office of Archaeology and Historic Preservation (OAHP). Both sites are located on outlying annexes and not on the main portion of Fairchild AFB.

3.5.2 Historical Resources

For purposes of this analysis, historical resources include buildings and structures, and other physical remains of historic significance that are present above the ground. Historical resources date from the period of initial European contact in this area (*circa* A.D. 1770) and extend into the present. They may include houses, homesteads, farmsteads (and associated support structures or buildings), cabins, forts, schools, bridges, dams, logging sites, military facilities, structures, or buildings, and items of a similar nature.

Historic buildings on Fairchild AFB include Military Era historical resources (World War II-era structures, Vietnam War Era structures, and Cold War Era buildings. One WWII and two Cold War buildings may be eligible for inclusion on the National Register of Historic Places. There are no historic buildings located in the ROI for the Proposed Action.

3.5.3 Native American Concerns

Two Native American tribes have been identified in the Fairchild AFB area: the Spokane Tribal Business Council and the Coeur d'Alene Tribe. No sites or areas that are considered important to these tribes have been identified on Fairchild AFB. The potential for culturally significant sites appears to be low based on records that indicate lands on the Base were not intensively used by Native Americans. The Fairchild AFB ICRMP indicates that the Base will be consulting with both tribes to obtain information about any culturally significant sites on the installation (USAF 2001).

3.6 UTILITIES AND INFRASTRUCTURE

3.6.1 Transportation Systems

Fairchild AFB has excellent access to the regional transportation network of highways. The Base is accessed from U.S. Highway 2 via an access road (Mitchell Drive) to the Main Gate. The intersection of Mitchell Drive is signalized at this location.

Gate processing rates during Alpha conditions peak inbound periods at Fairchild AFB were: 550 vehicles per hour per lane at the Main Gate with tandem processing; and, 90 vehicles per hour at the Graham Gate with a single checker for truck processing (USAF 2002a). Military family housing and the new elementary school are located within 2,000 feet of the Graham Gate. The Burlington Northern Santa Fe railroad runs north of Fairchild AFB along the northwestern perimeter of the Base.

The Rambo Gate is located east of the Main Gate at the northeast corner of the Base. Rambo Road is a two-lane paved roadway with gravel shoulders. Rambo Road is owned by the Air Force. The Rambo Gate is currently closed, open only for special events, ordnance delivery or emergencies.

Gate 20, on the eastern side of Fairchild AFB, is located on the southeast corner of the intersection of Rambo and Thorpe Roads. Gate 20 is accessed via Thorpe Road from the east. The gate operates on weekdays for limited hours, primarily for personnel in the Survivor School on the southern portion of the Base.

3.6.2 Solid Waste Management

Solid wastes include all waste materials that are neither hazardous nor toxic, and which are normally disposed of by dumping or incineration, or are recycled or recovered. The management of solid (non-hazardous) waste on Fairchild AFB includes the collection and disposal of solid wastes and recyclable material. Demolition and inert wastes generated on

Fairchild AFB are transported to an off-Base landfill. Refuse is sent to a waste-to-energy plant.

3.7 ENVIRONMENTAL MANAGEMENT

The Air Force established the Installation Restoration Program (IRP) in 1983 to identify, characterize, and evaluate past disposal sites and remediate contamination on its installations as needed to control migration of contaminants and potential hazards to ecological resources, human health, and the environment in accordance with CERCLA requirements. The program has since been renamed the Environmental Restoration Program (ERP). This program has two parts: former IRP sites that are Environmental Restoration Account (ERA)-eligible; and, sites not eligible for ERA but eligible for Environmental Compliance (EC) funds.

A total of 37 ERP sites and two Areas of Concern (AOC) are present on Fairchild AFB. Two of the ERP sites are basewide sites. In addition to the basewide sites, there are four known ERP sites in the vicinity of Gate 20. A summary of ERP sites on Fairchild AFB is provided in Table 3-5.

Table 3-5 ERP Sites on Fairchild AFB

Site	Location	Description	Record of Decision
FT-1	NW of Rambo and Thorpe Roads	Fire Training Area (IC/LTO)	Yes
FT-2	NW of Rambo and Thorpe Roads	Fire Training Area (IC/Soil LTM)	Yes
SW-7	NW of Rambo and Thorpe Roads	Asphalt South of Taxiway K (NFA)	Yes
SW-12	S of Thorpe Road	Disposal Area East of WSA (IC/NFA)	Yes
SD-37	Basewide	Basewide Oil/Water Separators (RI/FS)	No
SS-39	Basewide	TCE Orphan Plumes (RI/FS)	No

ROD Record of Decision
 IC Institutional Controls
 RI/FS Remedial Investigation/Feasibility Study
 LTO Long-Term Operation
 LTM Long-Term Monitoring
 WSA Waste Storage Area
 NFA No Further Action Required

3.8 HAZARDOUS MATERIALS AND WASTE

3.8.1 Hazardous Materials

Hazardous materials are those substances defined by CERCLA (42 USC Section 9601, *et seq.*), as amended by the Superfund Amendments and Reauthorization Act (40 CFR 300-372), and the Toxic Substances Control Act (15 USC Section 2601, *et seq.*). The Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (RCRA) (42 USC 6901, *et seq.*), that was further amended by the Hazardous and Solid Waste

Amendments, defines hazardous wastes. In general, both hazardous materials and wastes include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may present substantial danger to public health or welfare or to the environment when released or otherwise improperly managed.

Hazardous materials management at Air Force installations is established primarily by Air Force Instruction (AFI) 32-7086, *Hazardous Materials Management*. The AFI incorporates the requirements of all federal regulations, other AFIs, and DoD Directives (DoDD), for reduction of hazardous material uses and purchases.

The purchase and use of hazardous materials on Fairchild AFB must be authorized by the base's Hazardous Materials Management Plan (HMMP) established by AFI 32-7086, *Hazardous Materials Management*. As part of this program, the base operates a hazardous materials pharmacy. All hazardous materials enter the base through the pharmacy. Base functions request the hazardous material and quantity from the base pharmacy and the material is delivered to or picked up by the requesting function. No hazardous material may be used until it is entered into the Environmental Management Information System and approved for use. Under this system, the hazardous material pharmacy personnel maintain positive records for the location of the containers, from issue to return and ultimate disposal. The HMMP applies to all activities, including contractors.

3.8.2 Hazardous Waste

Unless otherwise exempted by Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) regulations, Resource Conservation and Recovery Act (RCRA), Subtitle C (40 CFR Parts 260 through 279) regulations are administered by the USEPA and are applicable to the management of hazardous wastes. Hazardous waste must be handled, stored, transported, disposed, or recycled in accordance with these regulations. The potential for hazardous waste generation from gate operations is negligible.

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

4.1 MISSION

The activities associated with the Proposed and Alternative Action would improve the Base's ability to accomplish its mission, which is to provide KC-135 air refueling capability.

4.2 NOISE

An environmental impact analysis related to noise includes the potential impacts on the local population. In considering the basis for evaluating significance of noise impacts, several items were examined, including: 1) the degree to which noise levels generated by construction and aircraft operation activities would be higher than the ambient noise levels; 2) the degree to which there would be annoyance and/or activity interference; and 3) the exposure of noise-sensitive receptors to noise levels above 65 dBA.

4.2.1 Proposed Action

Construction Noise. Assuming that noise from the construction and demolition equipment radiates equally in all directions, the sound intensity would diminish inversely as the square of the distance from the source increases. Table 4-1 shows the anticipated sound pressure levels at a distance of 50 feet for miscellaneous heavy equipment.

Construction at three of the Base gates would be accomplished under the Proposed Action. Equipment and vehicles involved in site preparation, foundation preparation, construction, and road work would generate the primary source of noise from these activities. Construction noise would be intermittent and short-term in duration. Typical noise levels generated by these activities range from 75 to 89 dB at 50 feet from the source.

For the purposes of this assessment, it is estimated the shortest distance between a noise source and a receptor such as a nearby Base building would be approximately 50 feet. Two residential units along Rambo Road are approximately 500 feet north of the gatehouse. Military family housing is located within 500 feet of the Graham Gate. No residential units are within 1,000 feet of the Main Gate and Gate 20.

Noise related to the construction projects may have a short-term impact on occupants in nearby residences along Rambo Road. Outdoor noise from construction activity at an occupied building 50 feet from the noise source could be as high as 75 to 89 dB (see Table 4-1). The corresponding interior noise levels during construction activity would be reduced from the 75 to 89 dB level by approximately 18 to 27 dB due to the NLR properties of the building's construction materials (USDOT 1992). This reduced level of noise could annoy less than 15 percent of nearby persons (refer to Section 3.3.2 and Table 3-1) and cause temporary disruption of speech during the noise event.

Table 4-1 Heavy Equipment Noise Levels at 50 Feet

Equipment Type	Number Used ¹	Generated Noise Levels, L _p (dB) ²
Bulldozer	1	88
Backhoe (rubber tire)	1	80
Front Loader (rubber tire)	1	80
Concrete Truck	1	75
Concrete Finisher	1	80
Crane	1	75
Asphalt Spreader	1	80
Roller	1	80
Flat Bed Truck (18 wheel)	1	75
Scraper	1	89
Trenching Machine	1	85

1 Estimated number in use at any time

L_p = sound pressure level

Source: CERL, 1978

No gate improvements would occur at the Graham Gate which would be closed (or open only for special events). Construction-related noise would not occur at the Graham Gate.

The potential for hearing loss involves direct exposure on a regular, continuing, long-term basis to noise levels above 75 dBA. As stated in Section 3.3.2, hearing loss projections are based on an average daily outdoor exposure of 16 hours over a 40-year period. It is anticipated the construction activities would occur between 7:30 a.m. and 4:00 p.m., five days per week for the duration of the project. Individuals would not be outdoors for the entire noise producing period. Under this condition, persons would not be exposed to long-term and regular noise above 75 dB. Therefore, nearby building occupants would not experience loss of hearing. Sleep interference is unlikely because the construction activities would occur during the daytime and the distance between the noise source and the residential units would attenuate the noise.

The number and type of aircraft operations would not change under the Proposed Action. Therefore, the primary source of noise at Fairchild AFB would continue to be from aircraft operations and the noise contours would not change from existing conditions. It should be noted that noise from flying activities would tend to mask the noise generated by construction projects for the same exposure area. The perception would be that construction noise likely would not be discernible during periods of aircraft operations. However, there could be periods of time during which construction noise could be discerned and provide minor annoyance. This condition would occur when construction activity is underway and flying activity is low.

Operational Noise. Operational noise levels along Rambo Road, adjacent to two private residences in the agricultural area east of the Base, would be expected to increase from baseline conditions as a result of commercial vehicles that would access the Base using the Rambo Gate. The noise associated with approximately 41 morning peak hour inbound

commercial vehicles would be expected. Because the projected inbound volume is not considered to be high (as evidenced by the low number of commercial vehicles observed in the queue at the Graham Gate), traffic-related noise impacts to residences along Rambo Road would not be considered significant.

Operational noise levels in the Graham Gate area, adjacent to housing and the elementary school, would be expected to decrease from baseline conditions with the relocating of commercial vehicles to the Rambo Gate.

4.2.2 Alternative Action

The Alternative Action would result in development of a commercial gate at the Graham Gate, and closing of the Rambo Gate.

Construction Noise. The noise related to Alternative Action construction projects may have a short-term impact on occupants in nearby residences at housing near the Graham Gate. Outdoor noise from construction activities at an occupied building 50 feet from the noise source could be as high as 75 to 89 dB (see Table 4-1). The corresponding interior noise levels during this construction activity would be reduced from the 75 to 89 dB level by approximately 18 to 27 dB due to the NLR properties of the building's construction materials (USDOT 1992). This reduced level of noise could annoy less than 15 percent of nearby persons (refer to Section 3.3.2 and Table 3-1) and cause temporary disruption of speech during the noise event.

No gate improvements would occur at the Rambo Gate which would be closed (or open only for special events). Construction-related noise would not occur at the Rambo Gate.

Operational Noise. Operational noise levels in the vicinity of the Graham Gate, near military family housing and the elementary school, would be expected to be similar to baseline conditions because commercial vehicles currently access the Base using the Graham Gate. Traffic-related noise is generated by approximately 41 morning peak hour inbound commercial vehicles at this gate. Because the projected inbound volume is not considered to be high (as evidenced by the low number of commercial vehicles observed in the queue at the Graham Gate), traffic-related noise impacts to residences near the Graham Gate would not be considered significant.

Operational noise levels in the Rambo Gate area, adjacent to two residences in the agricultural area east of the Base, would be the same as baseline conditions.

4.2.3 No Action Alternative

No existing structures would be demolished and no new AT/FP construction would occur under the No Action Alternative. No construction-related noise would result. The noise environment would be the same as baseline conditions.

4.2.4 Mitigation

Noise levels would be temporarily increased during the construction activities associated with the Proposed and Alternative Actions. During operation of the Proposed or Alternative Action, increased noise levels in the vicinity of the commercial gate would not be considered significant. Mitigation measures would not be required for either the Proposed or Alternative Action.

4.2.5 Cumulative Impacts

Cumulative noise impacts could result in the event that proposed AT/FP construction at the Main Gate occurs at the same time as planned demolition of the elementary school and/or planned additions/alternations to the Main Gate (Table 2-4). Impacts would not be considered significant because no residential units are located in the vicinity of the Main Gate. Cumulative impacts would not be expected as a result of construction activities at the Graham Gate, Rambo Gate or Gate 20 because the distance between these gates and cumulative construction project sites is great enough that there would be no combination of construction noise from the project sites. No cumulative impacts would be anticipated.

4.3 AIR QUALITY

Impacts to air quality would be considered significant if federal actions resulted in violation of a NAAQS, resulted in annual emissions of a pollutant greater than 250 tons per year (definition of a “major stationary source” in an attainment area as defined in 40 CFR 52.21(b)(1), or exceeded any significance criteria established by the Washington State Implementation Plan.

4.3.1 Proposed Action

Fugitive dust from ground disturbing activities, combustive emissions from construction equipment, and emissions from asphalt paving operations would be generated during construction and demolition. Fugitive dust would be generated from activities associated with site clearing, grading, cut and fill operations, and from vehicular traffic moving over the disturbed site. These emissions would be greatest during the initial site preparation activities and would vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions.

The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of construction activity. The USEPA has estimated that uncontrolled fugitive dust emissions from ground-disturbing activities would be emitted at a rate of 80 lbs of TSP per acre per day of disturbance (USEPA 1995). In a USEPA study of air sampling data at a distance of 50 meters downwind from construction activities, PM₁₀ emissions from various open dust sources were determined based on the ratio of PM₁₀ to TSP sampling data. The average PM₁₀ to TSP ratios for top soil removal, aggregate hauling, and cut and fill operations is reported as 0.27, 0.23, and 0.22, respectively (USEPA 1988). Using 0.24 as the average ratio for purposes of analysis, the

emission factor for PM₁₀ dust emissions becomes 19.2 lbs per acre per day of disturbance. Fugitive dust emissions from demolition activities would be generated primarily from building dismemberment, debris loading, and debris hauling. The USEPA has established a recommended emission factor of 0.011 lbs of PM₁₀ per square foot of demolished floor area. This emission factor is based on air sampling data taken from the demolition of a mix of commercial brick, concrete, and steel buildings (USEPA 1988).

The USEPA also assumes that 230 working days are available per year for construction (accounting for weekends, weather, and holidays), and that only half of these working days would result in uncontrolled fugitive dust emissions at the emitted rate described above (USEPA 1995). The construction emissions presented in Table 4-2 include the estimated annual PM₁₀ emissions associated with the Proposed Action at Fairchild AFB. These emissions would produce slightly elevated short-term PM₁₀ ambient air concentrations. The USEPA estimates that the effects of fugitive dust from construction activities would be reduced significantly with an effective watering program. Watering the disturbed area of the construction site twice per day with approximately 3,500 gallons per acre per day would reduce TSP emissions as much as 50 percent (USEPA 1995).

Specific information describing the types of construction equipment required for a specific task, the hours the equipment is operated, and the operating conditions vary widely from project to project. For purposes of analysis, these parameters were estimated using established cost estimating methodologies for construction and experience with similar types of construction projects (Means 1996). Combustive emissions from construction equipment exhausts were estimated by using USEPA approved emissions factors for heavy-duty diesel-powered construction equipment (USEPA 1985). The construction emissions presented in Table 4-2 include the estimated annual emissions from construction equipment exhaust associated with the Proposed Action at Fairchild AFB. As with fugitive dust emissions, combustion emissions would produce slightly elevated air pollutant concentrations. However, the effects would be temporary, fall off rapidly with distance from the proposed construction site, and would not result in any long-term impacts. Table 4-2 lists the annual emissions and the annual percent of change when compared to the baseline for the Proposed Action.

Table 4-2 shows estimated annual emissions from construction equipment exhaust associated with the Proposed Action at Fairchild AFB. Values on Table 4-2 reflect the maximum annual estimated emissions during the proposed 3-year construction period. The gate with the greatest emissions would be the Rambo Gate. As with fugitive dust emissions, combustion emissions would produce slightly elevated air pollutant concentrations. However, the effects would be temporary, fall off rapidly with distance from the proposed construction site, and would not result in any long-term impacts. Table 4-2 also shows the annual percent of change when compared to the baseline for the Proposed Action.

Table 4-2 Proposed Action Emissions, Three-Year Construction Period

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	SO _x (tpy)	NO _x (tpy)	PM ₁₀ (tpy)
AQCR CY99 Totals ^a	26,547	1,276	6,893	2,508	6,970
Proposed Action Annual Construction Emissions (max. annual emissions during 3-yr construction period)	1.63	0.09	0.04	0.33	6.56
Project Emissions as Percent of AQCR Emissions (3-year construction period)	0.006%	0.007%	0.0006%	0.013%	0.094%

a AIRData 2003

tpy tons per year

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant.

Table 4-3 provides the maximum annual estimated emissions for a one-year construction period assuming all gates are constructed during the same calendar year. Construction-related emissions would produce slightly elevated air pollutant concentrations. However, the effects would be temporary, fall off rapidly with distance from the proposed construction site, and would not result in any long-term impacts. Table 4-3 also includes the estimated annual percent of change when compared to the baseline for the Proposed Action (for the one-year construction period).

Table 4-3 Proposed Action Emissions, One-Year Construction Period

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	SO _x (tpy)	NO _x (tpy)	PM ₁₀ (tpy)
AQCR CY99 Totals ^a	26,547	1,276	6,893	2,508	6,970
Proposed Action Annual Construction Emissions (max. annual emissions during 1-yr construction period)	2.16	0.21	0.09	0.83	10.19
Project Emissions as Percent of AQCR Emissions (1-year construction period)	0.008%	0.016%	0.001%	0.033%	0.146%

a AIRData, 2003

tpy tons per year

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant.

Emissions would also be expected from asphalt paving operations. The primary pollutant from asphalt paving is CO; however, minor emissions of other criteria pollutants can be expected. To determine potential emissions from asphalt paving operations, it was assumed that the unit weight of asphalt concrete is 149 pounds per cubic foot (lb/ft³). The quantity of asphalt concrete required for each construction project is based on an assumed

pavement depth of 10 inches. The USEPA has established emission factors for CO, VOCs, SO_x, NO_x, and PM₁₀ of 0.340, 0.017, 0.005, 0.025, 0.020 lbs of pollutant per ton of asphalt concrete, respectively. Expected emissions from asphalt paving are included under the annual project emissions in the Table 4-2 data. Emissions from paving would last only as long as the duration of construction activity, fall off rapidly with distance from the construction site, and would not result in long-term impacts.

Review of data in Table 4-2 indicates that the greatest increase in emissions from demolition and construction activities would be PM₁₀ (6.56 tons), which equates to 0.094 percent of the PM₁₀ emissions within the AQCR. The emissions would be temporary and would be eliminated after completion of the activity. Emissions fall below the 10 percent level that would be considered regionally significant by the USEPA if the region were nonattainment for any of the criteria pollutants as stated in 40 CFR 51, Subpart W, Section 852. Therefore, the air emission impacts from the construction activities associated with the Proposed Action would not be considered significant.

Based on the requirements outlined in the USEPA general conformity rule published in 58 Federal Register 63214 (November 30, 1993) and codified at 40 CFR Part 93, Subpart B (for federal agencies), a conformity analysis is required to analyze whether the applicable criteria air pollutant emissions associated with the project equal or exceed the threshold emission limits that trigger the need to conduct a formal conformity determination. The intent of the conformity rule is to encourage long range planning by evaluating air quality impacts from federal actions before the projects are undertaken. This rule establishes an elaborate process for analyzing and determining whether a proposed project in a nonattainment area conforms to the SIP and federal standards. As reflected by the conformity analysis calculations, emissions from the Proposed Action would fall below the 10 percent level that would be considered regionally significant by the USEPA if the region were nonattainment. However, the AQCR is in attainment. For these reasons a conformity determination would not be required.

A new 8-hour standard for ozone has also been proposed. However, a federal court blocked the implementation of the standard. Therefore, ozone is not analyzed.

4.3.2 Alternative Action

The Alternative Action to develop the Graham Gate for commercial vehicle entry would require construction activities similar in nature to the construction at the Rambo Gate evaluated for the Proposed Action. Because construction would be similar to that of the Proposed Action, impacts to the air quality would be the same as described in Subchapter 4.3.1 (Tables 4-2 and 4-3). Construction emissions may have a short-term impact, but would not result in long-term changes to air quality.

4.3.3 No Action Alternative

Emissions would continue to be generated by Base activities such as aircraft operations and other aircraft maintenance activities, as well as vehicle, boiler, generator, and fueling

operations, and industrial processes. It is anticipated the emissions from these activities would continue at the levels generated under the baseline condition.

4.3.4 Cumulative Impacts

The Air Force proposes to conduct three other construction projects over the three years during which the proposed construction associated with the AT/FP project on Fairchild AFB would occur. When considering area, the largest of the other projects would be the demolition of the elementary school. For analysis purposes, the emissions from this project were combined with the Proposed or Alternative Action maximum annual emissions to represent the most conservative condition that would occur in any one year for cumulative condition impacts. The methodology used to calculate the emissions for the Proposed Action was used for the cumulative conditions. Table 4-4 lists the annual emissions and the annual percent of change when compared to the baseline for the Proposed Action cumulative condition.

Table 4-4 Air Pollutant Emissions for Cumulative Condition

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	SO _x (tpy)	NO _x (tpy)	PM ₁₀ (tpy)
AQCR CY99 Totals ^a	26,547	1,276	6,893	2,508	6,970
Proposed Action (Rambo Gate, max. year)	1.63	0.09	0.04	0.33	6.56
Other Actions	0.12	0.51	0.14	1.31	1.41
Total Annual Emissions ^b	1.75	0.60	0.18	1.64	7.97
Cumulative Emissions at Fairchild AFB as Percent of AQCR Emissions	0.007%	0.047%	0.003%	0.065%	0.114%

a AIRData, 2003

b Estimated emissions from Proposed Action (maximum one year emissions) and other action activities during the same year.

tpy tons per year

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant.

Review of the data in Tables 4-4 indicates that the greatest increase in emissions from demolition and construction activities for either cumulative condition would be PM₁₀ (7.97 tons) under the Proposed or Alternative Action cumulative condition. The PM₁₀ emissions equate to 0.114 percent of the PM₁₀ emissions within the AQCR. The emissions for cumulative conditions would be temporary and would cease after completion of the activity. Emissions for the cumulative condition fall below the 10 percent level that would be considered regionally significant by the USEPA if the region were nonattainment for any of the criteria pollutants as stated in 40 CFR 51, Subpart W, Section 852. Therefore, the air emissions from the construction activities associated with the Proposed Action and Alternative Action cumulative conditions would not be considered significant.

4.3.5 Mitigation

Potential criteria pollutant emissions associated with the Proposed or Alternative Action do not exceed significance criteria requirements. Therefore, no mitigative actions for improving the ambient air quality would be required. Although no mitigation measures are required, the Air Force would ensure that the best management practice of site watering for dust control is accomplished for construction involving ground disturbance.

4.4 BIOLOGICAL RESOURCES

An impact to biological resources would be considered significant if the action would impact a threatened or endangered species, substantially diminish habitat for a plant or animal species, substantially diminish a regionally or locally important plant or animal species, interfere substantially with wildlife movement or reproductive behavior, and/or result in a substantial infusion of exotic plants or animal species.

4.4.1 Proposed Action

Vegetation and Wildlife

The Proposed Action would result in loss of approximately 6.5 acres of ruderal vegetation/non-native grassland from construction of new AT/FP facilities (including new roadways) at the Main Gate, Rambo Gate and Gate 20. Construction activities associated with the Proposed Action would occur within developed, maintained areas with extant, highly modified and disturbed landscape. The activities would not substantially change habitat for plant or animal species, nor would they diminish an important plant or animal species. Construction work limits would be delineated to avoid unnecessary removal of vegetation. Trees and shrubs would be retained to the greatest extent possible. There would be no impacts to vegetation outside the developed areas of the Base. Therefore, no significant adverse effects to wildlife and vegetation would be anticipated as a result of the Proposed Action.

Threatened, Endangered, and Special Status Species

Construction areas for the Proposed Action are not located in the vicinity of habitat for the Federal-listed endangered and Washington-listed threatened Spalding's catchfly or nesting area for the grasshopper sparrow (a Washington-listed Monitor species). Proposed Action activities would not impact continued existence of federal and state listed endangered and threatened species occurring on Fairchild AFB.

Wetlands

The Proposed Action would not require construction of any facilities in or near any wetlands. The Proposed Action would not result in any impacts to wetlands.

4.4.2 Alternative Action

The Alternative Action would result in loss of approximately 4.5 acres of ruderal vegetation/non-native grassland from construction of new AT/FP facilities (including new roadways) at the Main Gate, Graham Gate and Gate 20. The Alternative Action would result in impacts to biological resources that would be similar to that described for the Proposed Action. The Alternative Action would not result in any impacts to vegetation, wildlife, threatened or endangered species, or wetlands.

4.4.3 No Action Alternative

The No Action would not result in any construction at any of the Base gates. No impacts to biological resources would result under baseline conditions.

4.4.4 Mitigation

No adverse effects were identified for biological resources. Therefore, no mitigation measures would be required.

4.4.5 Cumulative Impacts

The cumulative projects identified for Fairchild AFB would result in construction within the developed portion of the Base. No habitat removal would result from demolition of the elementary school near the Main Gate, or from additions/alterations to the Main Gate. The Proposed or Alternative Action would not result in any cumulative impacts to biological resources.

4.5 CULTURAL RESOURCES

An undertaking is considered to have an effect on a historic property when the undertaking may alter characteristics of the property that may qualify the property for inclusion in the NHRP. An effect is considered adverse when it diminishes the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects on historic properties would include, but would not be limited to:

- physical destruction, damage, or alteration of all or part of the property;
- isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the National Register;
- introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting;
- neglect of a property resulting in its deterioration or destruction; and
- transfer, lease, or sale of the property (36 CFR 800.9[b]).

Any ground-disturbing action in the area of an NRHP-eligible or potentially eligible archaeological site, or modification to such a site, can affect the integrity of that cultural resource, resulting in alteration or destruction of those characteristics or qualities which make

it significant and potentially eligible for inclusion in the NRHP. While archaeological sites or historic buildings or structures can be destroyed during a single event, more often it is the cumulative effect of recurrent disturbing actions that diminish the integrity of the cultural resource and its significant characteristics.

4.5.1 Proposed Action

Archaeological Resources. No NRHP-eligible archaeological resources are located within or adjacent to the ROI for Fairchild AFB. The probability is low that undisturbed, significant archaeological resources, including human graves, will be discovered on Fairchild AFB during future construction (USAF, 2001). The Proposed Action would not be expected to result in any effects to archaeological resources on Fairchild AFB.

The Fairchild AFB ICRMP sets forth standard procedures that must be followed in the event any type of archaeological site is discovered during the course of any earth-disturbing activity of the Base. In the event previously undetected archaeological resources or human remains are discovered during project activities, the construction contractor or responsible individual would be required to stop construction activities in the affected area (and a reasonable buffer exclusionary area) and contact the Security Forces Commander, and the 92 CES/CEV Cultural/Natural Resources Manager, who will take steps to minimize impacts to the resource. Procedures to follow must be in accordance with Section 6.8.2 (*Procedures to be Followed if Any Type of Archaeological Site is Discovered*) of the ICRMP for Fairchild AFB. Any unknown site or other cultural remains inadvertently discovered must be assumed to be potentially eligible for NRHP listing.

Historical Resources. No NRHP-eligible historical resources are located within the ROI for Fairchild AFB. The Proposed Action would not result in demolition or modifications to any historic properties or structures. The Proposed Action would not result in impacts to historical resources.

Native American Concerns. No Native American concerns have been identified for Fairchild AFB. The Proposed Action would be implemented in accordance with the Fairchild AFB ICRMP, which specifies notification procedures applicable to Native American groups. With compliance to the ICRMP, the Proposed Action would not result in impacts to Native American concerns.

4.5.2 Alternative Action

The Alternative Action would result in development of the Graham Gate as a commercial gate. Construction activities associated with the Alternative Action would be similar to the Proposed Action. Impacts to cultural resources would be the same as described for the Proposed Action.

4.5.3 No Action Alternative

No facilities actions associated with AT/FP construction would be accomplished at Fairchild AFB under the No Action Alternative. However, facilities construction typical of

that in previous years likely would occur as part of the Base's overall facilities modernization plan. Cultural resources would continue to be managed under existing regulations and the Base's ICRMP.

4.5.4 Mitigation

No significant archaeological and historical resources effects have been identified. Therefore, no mitigation measures would be required.

4.5.5 Cumulative Impacts

As with the Proposed Action, no NRHP-eligible archaeological or historical resources are found within the ROI for the other actions. Cultural resources would continue to be managed under existing regulations and the Base's ICRMP. Thus, when combining the other actions with the Proposed Action, no cumulative adverse cultural resources effects, including visual, would be anticipated under the cumulative condition.

4.6 INFRASTRUCTURE AND UTILITIES

Impacts to the transportation systems and solid waste management would be considered significant if the federal action substantially increased the demands on systems, resulting in the need for additional capacity or new facilities.

4.6.1 Proposed Action

Transportation Systems. Impacts would include a temporary increase in construction-related traffic during the construction activities. It is anticipated construction-related traffic would be localized to the specific construction project area and the route between the project site and the Base gate. The construction-related traffic would be temporary, lasting as long as the project activity in that area. Traffic flow in the vicinity should improve after the construction activities are complete due to the improved layout of specific gate and local roadways. It is anticipated that vehicular traffic at the Base gates would be acceptable, with no substantial change in volumes from baseline conditions. No substantial change to traffic congestion would be expected as a result of the Proposed Action. The Proposed Action would be expected to lessen, and not worsen, congestion during peak morning hours.

Solid Waste Management. In considering the basis for evaluating the significance of impacts on solid waste, several items were considered. These items include evaluating the degree to which the Proposed Action waste generation could affect the existing solid waste management program and the capacity of the area landfill. Analysis of the impacts associated with the proposed demolition and construction activities is based on the following assumptions:

- The weight of concrete debris is 150 lb/ft³ (Merritt 1976);
- The weight of asphaltic concrete roadways is 130 lb/ft³ (AI 1983);

- Approximately 4 pounds of construction debris is generated for each square foot of floor area for new structures (Davis 1995);
- Approximately 92 pounds of demolition debris is generated for each square foot of floor area of demolished structures (USACE 1976);
- Approximately 96 pounds of demolition and construction debris are generated for each square foot of floor area of renovated structures;
- Approximately 1 pound of construction debris is generated for each square foot of new asphaltic concrete pavement;

Under the Proposed Action, there would be no change in the number of personnel residing or working on Base. Thus, there would be no change in solid waste generated by Air Force active duty, reserve, and civilian personnel. The volume of municipal waste transported to the waste-to-energy plant would continue at the same rate as the baseline condition.

Type IV solid waste would be generated from implementation of the Proposed Action. These wastes would consist of building debris and construction materials such as concrete, metals (i.e., roofing, reinforcement bars, conduit, and piping), fiberglass (i.e., roofing materials and insulation), cardboard, plastics (PVC piping, packaging material, and shrink wrap), and lumber. These materials would be placed in the appropriate construction materials landfill. These wastes would be in excess of the solid municipal wastes generated by Base personnel.

With implementation of the Proposed Action, approximately 2,394 tons of solid waste would be generated by construction of new facilities, demolition of structures and the construction of new pavement surfaces. The exact amount of debris that would be disposed of in a landfill is unknown because the contractor will recycle material to the maximum extent practicable. Demolition and inert wastes generated by the Proposed Action would be transported to an off-Base landfill that is permitted to accommodate planned waste disposal. Refuse would continue to be sent to a waste-to-energy plant. Impacts to solid waste management would not be expected from the Proposed Action.

4.6.2 Alternative Action

The impacts to transportation systems and solid waste generation that would result from the Alternative Action would be similar to the Proposed Action. No change in the volume of daily traffic onto the Base would result, although commercial vehicles would access via the Graham Gate (instead of the Rambo Gate).

With implementation of the Alternative Action, approximately 2,215 tons of solid waste would be generated by construction of new facilities, demolition of structures and the construction of new pavement surfaces. The exact amount of debris that would be disposed of in a landfill is unknown because the contractor will recycle material to the maximum extent practicable. Demolition and inert wastes generated by the Alternative Action would be transported to a permitted, off-Base landfill. Refuse would continue to be sent to a waste-to-

energy plant. Impacts to solid waste management would not be expected from the Alternative Action.

4.6.3 No Action Alternative

No facilities actions associated with AT/FP gate improvements would be accomplished at Fairchild AFB under the No Action Alternative. Transportation and solid waste generation would continue at the levels experienced under the current conditions. The volume of vehicular traffic and solid waste generation would remain at current levels because there would be no significant change in assigned personnel.

4.6.4 Mitigation

No significant impacts would be anticipated. Therefore, no mitigation would be required.

4.6.5 Cumulative Impacts

Transportation Systems. Construction projects associated with the other actions would increase project-related traffic as described for the Proposed Action. Since the other actions are in the same area as the Proposed Action construction activities, there could be a slight cumulative increase in traffic. As with the Proposed Action, the construction-related traffic would be temporary, lasting as long as the project activity in that area. No change to weekday on-Base roadway volumes would be anticipated upon completion of the projects. It is anticipated that vehicular traffic at the Base gates would be acceptable, with no substantial change in volumes from baseline conditions. No substantial change in traffic congestion would be expected as a result of the cumulative condition.

Solid Waste Management. Based on the information in Subchapter 2.5.1, a total of about 1,220 square feet of facility space would be constructed under other actions, and 58,176 square feet would be demolished. It is estimated that 2,678 tons of debris would be generated by the other actions. Disposal of demolition and construction debris from the other actions would increase the disposal rate at the off-Base landfill over the three-year period, however this increase would not be considered substantial. It is assumed the contractor would recycle materials to the maximum extent possible, thereby reducing the amount of construction and demolition debris disposed in the landfill. However, the exact amount of debris cannot be estimated at this time. Disposal of construction and demolition debris from the Proposed Action and other actions would not significantly reduce the life expectancy of the landfill.

4.7 ENVIRONMENTAL MANAGEMENT

Impacts to the environmental restoration program would be considered significant if the federal action disturbed (or created) contaminated sites resulting in adverse effects to human health or the environment. An impact would be considered significant if it were to result in: exposure of people or structures to major chemical hazards; impede the progress of ongoing or planned investigations or remedial actions; or, result in uncontrolled release of chemicals/fuels into the environment.

4.7.1 Proposed Action

The Proposed Action would require construction activities at each of the gates on Fairchild AFB. Proposed construction at Gate 20 would be located in an area that is within proximity to ERP sites FT-01, FT-02, SW-7 and SW-12. Facilities design and construction activities at the Gate 20 would be coordinated with the Base Environmental Flight and Bioenvironmental Engineering to ensure that construction would avoid interference with any ongoing ERP investigation and remediation work and would not worsen the condition of this site. Before construction activities begin, the contractor would be required to coordinate with the Environmental Flight and prepare a work plan and health and safety plan in case contamination is encountered during excavation activities. The work plan and health and safety plan would address measures for using field instruments capable of detecting contaminants at harmful levels. In the event any contaminated soil is encountered, the construction contractor will be required to excavate, properly dispose any contaminated soil and replace excavated soil with clean soil. With implementation of these best management practices, impacts to ERP sites would be avoided.

In the event of a spill of any amount or type of hazardous material or waste to include petroleum product during demolition or construction, the contractor would take immediate action to contain and clean up the spill. Contractor spill clean up personnel would be trained and certified to perform spill clean up. The contractor would be responsible for the proper characterization and disposal of any waste and clean up materials generated. All waste and associated clean up material would be removed from the Base and transported and/or stored in accordance with regulations until final disposal. All details concerning the spill would be provided to the government. The contractor is responsible for restoring a spill site to the condition prior to the spill or to an improved condition.

4.7.2 Alternative Action

The Alternative Action to develop a commercial gate at the Graham Gate would result in the same impacts as the Proposed Action. Construction activities at Gate 20 would be required and the same management practices identified for the Proposed Action would be accomplished. Impacts to environmental management of ERP sites would not be expected as a result of the Alternative Action.

4.7.3 No Action Alternative

No facilities actions associated with AT/FP requirements would be accomplished at Fairchild AFB as a result of the No Action Alternative. Impacts to ERP sites would not be anticipated. However, facilities construction typical of that in previous years likely would occur as part of the overall facilities modernization plan for Fairchild AFB. Management of ERP site work would continue in accordance with applicable environmental plans and policies for Fairchild AFB.

4.7.4 Cumulative Impacts

The two other planned projects on Fairchild AFB are located in the immediate area of the Main Gate, where no ERP sites are located. Other planned projects would be required to comply with regulatory requirements and best management practices for ERP site avoidance as described for the Proposed Action. This would minimize the potential for cumulative impacts. When completed, activities at the other facilities would be managed in accordance with applicable environmental plans and policies. No cumulative impacts to environmental management of ERP sites on Fairchild AFB would be anticipated.

4.8 HAZARDOUS MATERIALS AND WASTE

Impacts to hazardous materials and waste management would be considered significant if the federal action resulted in noncompliance with applicable federal and Washington environmental quality regulations or caused waste generation that could not be accommodated by current Fairchild AFB waste management capacities.

4.8.1 Proposed Action

Hazardous Materials. Products containing hazardous materials would be procured and used during construction activities as well as operation of the facility. Construction contractors would be required to use and store hazardous materials in accordance with all federal, state, and local regulations. It is not anticipated that any hazardous materials not currently used for gate operation would be needed for operation of the new gates. The existing hazardous materials handling processes and procedures could accommodate the hazardous materials associated with operations at the new gates.

Hazardous Wastes. Hazardous wastes could be generated during the construction activities. It is anticipated that the quantity of hazardous wastes generated during the construction period would be negligible. The construction contractor would maintain records of all waste determinations, including appropriate results of analysis performed, substances and sample locations, date and time of collection, and other pertinent data as required by 40 CFR Part 280, Section 74 and 40 CFR, Part 262, Subpart D.

In the event of a spill of any amount or type of hazardous material or waste (petroleum products included), the construction contractor would take immediate action to contain and clean up the spill. Contractor spill clean up personnel would be trained and certified to perform spill clean up. The contractor would be responsible for proper characterization and disposal of any waste and clean up materials generated. All waste and associated clean up material would be removed from the project site and transported and/or stored in accordance with regulations until final disposal.

The potential for hazardous waste generation from gate activity would continue to be negligible. Any hazardous waste generated would be handled in accordance with federal, state, and local laws and regulations, including RCRA requirements for waste management and Department of Transportation requirements for waste transport.

4.8.2 Alternative Action

The hazardous materials and wastes discussion and analyses for the Proposed Action apply to the Alternative Action.

4.8.3 No Action Alternative

No facilities actions associated with AT/FP gate improvements would be accomplished at Fairchild AFB under the No Action Alternative. It is anticipated that the volumes of hazardous materials purchased and hazardous wastes generated would continue at the current levels. No significant impacts occur from the volumes of materials and wastes purchased and generated and the existing management procedures would continue to be used.

4.8.4 Mitigation

No significant impacts would be anticipated. Therefore, no mitigation would be required.

4.8.5 Cumulative Impacts

The discussion and analyses for the Proposed Action apply to the other projects and no cumulative significant hazardous materials and wastes impacts would be anticipated.

4.9 UNAVOIDABLE ADVERSE IMPACTS

Unavoidable adverse impacts would result from implementation of the Proposed Action.

4.9.1 Air Quality

The emission of air pollutants associated with construction at the Base gates is an unavoidable condition, but is not considered significant and a Clean Air Act General Conformity Determination would not be required.

4.9.2 Noise

Noise resulting from temporary construction activities at the Base gates is an unavoidable condition. Sleep disturbance, annoyance, and speech interference may occur for the Proposed or Alternative Action. However, hearing impairment is not expected. Noise would not be considered a significant impact.

4.9.3 Environmental Management

The loss of aggregate, which would become inaccessible, would occur as a result of the construction activities. However, due to the potential for reuse of this material on site, the relatively small portion of the resource area affected and the low economic value of aggregate in the areas, this condition would not be considered significant. Earthquake-related hazards,

including ground shaking and high ground accelerations that may cause damage to new facilities would be an unavoidable condition.

4.9.4 Biological Resources

Site grading associated with construction projects would remove vegetation and associated small animal life now occupying or utilizing the affected habitat. The affected sites are in the areas of the bases that were previously disturbed and would not presently provide significant habitat for many species. Plants and wildlife would be extirpated from the site, decreasing site floral and faunal diversity. Although unavoidable, this adverse condition would not be considered significant with incorporation of avoidance measures and best management practices.

4.9.5 Safety

The potential for exposure to harmful substances in the event of an explosion at a Base gate is an unavoidable, although unlikely, condition associated with the Proposed Action. However, the potential for these unavoidable situations would not significantly increase over baseline conditions, and therefore would not be considered significant.

4.9.6 Infrastructure and Utilities

The use of nonrenewable resources is an unavoidable occurrence, although not considered significant. The Proposed and Alternative Action would require use of fossil fuels, a nonrenewable natural resource. Energy supplies, although relatively small, would be committed to the Proposed Action or Alternative Action.

4.9.7 Hazardous Materials and Wastes

Hazardous materials and wastes would continue to be purchased and generated. It is anticipated the volumes would be small based on the activities at the gates. Use of the existing management procedures would minimize the potential for significant impacts.

4.10 RELATIONSHIP BETWEEN SHORT-TERM USES AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Neither the Proposed Action nor the Alternative Action would result in intensification of land use in the area surrounding the Base. Development of the Proposed Action, Alternative Action, or No Action Alternative would not represent a significant loss of open space. The sites are designated for development, and were not planned for use as open space. Therefore, it is not anticipated that the Proposed Action, Alternative Action, or No Action Alternative would result in any cumulative land use or aesthetic impacts. Long-term productivity of the sites would be increased by development of the Proposed or Alternative Action.

4.11 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The irreversible environmental changes that would result from implementation of the Proposed Action, Alternative Action, or No Action Alternative involve consumption of material resources, energy resources, land, biological habitat, and human resources. The use of these resources is considered to be permanent.

4.11.1 Material Resources

Building materials (for construction of facilities), concrete and asphalt (for facilities and roads), and various material supplies (for infrastructure improvements) would be used for the Proposed or Alternative Action. Most of these materials are not in short supply, and are readily available from suppliers in the region. Use of these materials for the Proposed Action would not limit other unrelated construction activities.

4.11.2 Energy Resources

Energy resources such as petroleum-based products (such as gasoline and diesel), natural gas, and electricity would be used for the Proposed or Alternative Actions and would be irretrievably lost. Gasoline and diesel would be used for operation of construction vehicles. Gasoline would be used for vehicle operation. Natural gas and electricity would be used to operate facilities. Consumption of these energy resources would not place a significant demand on their supply systems or within the region.

4.11.3 Land

Implementation of either the Proposed or Alternative Actions would result in construction of new facilities on Fairchild AFB. This land would be lost to other uses during the operational life of the improved gates. The loss of open space is not considered irreversible.

4.11.4 Biological Habitat

The Proposed Action or Alternative Action would result in the irreversible destruction or loss of the vegetation on proposed construction sites. Neither action would remove a significant amount of open space or undeveloped land currently functioning as biological habitat.

4.11.5 Human Resources

The use of human resources for construction and operation is considered an irretrievable loss only in that it would preclude the affected personnel from engaging in other work activities. However, the use of human resources for either the Proposed Action or Alternative Action represents employment opportunities, and is considered beneficial.

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CHAPTER 5

LIST OF PREPARERS

Name	Degree	Resource	Years of Experience
Crisologo, Rosemarie	B.S., Biological Sciences M.S., Environmental Engineering	Environmental Science	21
Gaddi, Elvira	B.S., Chemical Engineering M.S., Chemical Engineering	Environmental Compliance	22
Schnapp, Angela	B.S. Nuclear Engineering M.S. Environmental Engineering	Environmental Engineering	9
Wallin, John	B.A., Biology M.A., Management	Project Manager	32
Wooten, R.C., Ph.D.	Ph.D., Ecology and Biology	Technical Manager	34

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CHAPTER 6

PERSONS AND AGENCIES CONSULTED

The following persons and agencies consulted during preparation of this EA.

Brooks Air Force Base, Texas, Headquarters Air Force Center for Environmental Excellence

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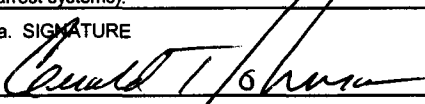
CHAPTER 7 REFERENCES

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- USAF 2002a. *Gate Security, Safety and Capacity Traffic Engineering Study. Fairchild Air Force Base, Washington.* Draft (June) and Final (August).
- USAF 2002b. *Add/Alter Main Gate Environmental Assessment. United States Air Force. Fairchild Air Force Base.* Proponent: 92 CES/CEOE. September.
- USAF 2002c. *Integrated Natural Resources Management Plan for Fairchild Air Force Base, Washington.* 92nd Air Refueling Wing. December 1999. Updated January 16, 2002.
- USAF 2001. *Integrated Cultural Resources Management Plan for Fairchild Air Force Base.* February.
- USAF 2000. *Stormwater Pollution Prevention Plan for Fairchild Air Force Base.* March 7.
- USAF 1999. *Wetland Management Plan. Fairchild Air Force Base.* Prepared by 92 CES/CEV. December.

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APPENDIX A
AIR FORCE FORM 813

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REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS		Report Control Symbol RCS:			
INSTRUCTIONS Section I to be completed by Proponent; Sections II and III to be completed by Environmental Planning Function. Continue on separate sheets as necessary. Reference appropriate item number(s).					
SECTION I - PROPONENT INFORMATION					
1. TO (Environmental Planning Function) 92 CES/CEV	2. FROM (Proponent organization and functional address symbol)	2a. TELEPHONE NO.			
3. TITLE OF PROPOSED ACTION Anti-Terrorism/Force Protection Activities at Fairchild AFB, Washington					
4. PURPOSE AND NEED FOR ACTION (<i>identify decision to be made and need date</i>) The proposed action is needed to improve gate security, personnel safety and reduce traffic congestion while maintaining access control requirements in support of force protection and security at Fairchild AFB.					
5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPAA) (<i>Provide sufficient details for evaluation of the total action.</i>) The Proposed Action would modify base perimeter and entry control facilities to meet force protection requirements for visitor control, vehicle inspection, security/overwatch provisions. The Proposed Action would include traffic flow improvements at each gate (roadway improvements, signing, lighting and speed control), operational modifications and associated upgrades (gate security, vehicle processing and vehicle arrest systems).					
6. PROPONENT APPROVAL (Name & Grade) GERALD T JOHNSON GS-13	6a. SIGNATURE 	6b. DATE 30 JUL 2003			
SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY (Check appropriate box and describe potential environmental effects including cumulative effect.) (+ = positive effect; 0 = no effect; - = adverse effect; U = unknown effect)		+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (<i>Noise, accident potential, encroachment, etc.</i>)					X
8. AIR QUALITY (Emissions, attainment status, state implementation plan, etc.)					X
9. WATER RESOURCES (Quality, quantity, source, etc.)					X
10. SAFETY AND OCCUPATIONAL HEALTH (Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.)			X		
11. HAZARDOUS MATERIALS/WASTE (Use/storage/generation, solid waste, etc.)			X		
12. BIOLOGICAL RESOURCES (Wetlands/floodplains, flora, fauna, etc.)					X
13. CULTURAL RESOURCES (Native American burial sites, archaeological, historical, etc.)					X
14. GEOLOGY AND SOILS (Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)			X		
15. SOCIOECONOMIC (Employment/population projections, school and local fiscal impacts, etc.)			X		
16. OTHER (Potential Impacts not addressed above.)			X		
SECTION III - ENVIRONMENTAL ANALYSIS DETERMINATION					
17.	☐	PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX) # _____; OR			
	X	PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED.			
REMARKS 7. Action would not result in changes to land use or aircraft operations on the base. Construction-related noise will be evaluated. 10. Action would not have potential for chemical exposure, explosives safety quantity-distance issues. 11. Action would not result in any change in the use, storage or generation of hazardous materials or hazardous waste. 15. Action would not result in any changes to employment, population and school, nor would it result in any fiscal impacts. 18. Action would not have potential impacts on environmental justice, utilities/infrastructure, or public services. Transportation and aesthetics will be evaluated. 17. An environmental assessment (EA) is being prepared to evaluate the impacts of this action on the Fairchild AFB area No direct, indirect or cumulative environmental impacts are anticipated with this action. The proposed action occurs in an area designated as in attainment for all air quality standards. The proposed action is considered to be de minimis, therefore, a conformity determination is not required.					
ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (Name & Grade) RONALD R. DANIELS, EPC EXEC SEC.		19a. SIGNATURE 		19b. DATE 11 Sep 03	

AF FORM 813 CONTINUATION SHEET

4. PURPOSE AND NEED

The purpose of the action is to improve gate security, ensure personnel safety and reduce traffic congestion, while maintaining access control at Fairchild AFB. The action is needed to:

- Ensure the protection and security of Department of Defense (DoD) forces and assets against acts of terrorism;
- Ensure the safety of security forces and motorists;
- Improve the Base entry gate capacity and traffic flow; and,
- Improve the aesthetic quality of the Base perimeter and ECFs on the Base.

5. DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Proposed Action. The Air Force is proposing to construct physical improvements to process visitors and commercial vehicles, as well as implement operational modifications ECFs on Fairchild AFB, as follows:

- **Main Gate.** A new Visitor Center would be constructed and the existing parking area would be expanded at the Main Gate, which would operate with a third inbound lane. The gate would operate 24 hours per day.
- **Graham Gate.** This gate would be closed and used only for special events.
- **Gate 20.** This gate would operate with one inbound lane and one outbound reject/turnaround lane. The gate would continue to provide access for personnel on the southern portion of the Base.
- **Rambo Gate.** The Rambo Gate would operate to process commercial vehicles only. The gate would operate with two inbound inspection lanes and three holding lanes.
- **Other Improvements.** To further reduce traffic during morning peak period, the Air Force will consider improvements to signage, lighting improvements, speed control and other design considerations (tandem processing islands, vehicle arrest systems, and gate security systems).

Alternative Action. As an alternative to the Proposed Action, the Air Force would continue commercial vehicle entry at the Graham Gate (not develop the Rambo Gate for commercial operations). Improvements to the Graham Gate would include: construction of a two-lane, inbound roadway for semi-trailers (under increased security conditions); and, the construction of a covered inspection area, gatehouse, restroom, and pop-up barrier as an overwatch. The inspection pit would contain adequate technologies to inspect the underside of semi-trailers. The existing inbound lanes would be used for processing and inspection of smaller trucks and contractor vehicles with passes. The gate would also be open to outbound trucks. The traffic control of the intersection of Graham Road and Offutt Parkway would be modified, and the existing parking lot north of the gate would be eliminated.

No Action Alternative. Fairchild AFB would continue to operate the perimeter and ECFs under existing conditions. The number of active duty military, Reserve Associate military, government civilian, and contractor personnel at the Base would remain at current levels. No ECF or perimeter security construction or other improvements would occur.